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THIS WEEK'S NEWS

THE Government of Qatar, Persian Gulf, have invited architects to submit designs for a 100-bed hospital, complete with staff quarters, at Doha. Premiums offered are £1,250, £1,000 and £750. p. 153

THE DEATH of Dr. H. V. Lanchester, F.R.I.B.A., pioneer of town planning and a former Editor of "The Builder," is reported on p. 154

"A FREE AND FAIR RUN for private enterprise" was advocated by Mr. Macmillan as an essential to the production of more houses. He was speaking at the L.M.B.A. annual meeting when Mr. Gerald Hill was elected President for 1953. p. 170

MR. M. C. G. AYRE writes on the main differences between the new L.C.C. building by-laws, which came into effect recently, and the old 1937 code. p. 172

IN ACCORDANCE with the sliding scale the National Joint Council for the Building Industry have awarded an extra 2d. an hour to operatives with effect from February 2. p. 173

A FEELING OF CONFIDENCE that the supply of bricks in 1953 will be sufficient to meet the building programme, provided due attention is paid to their economic use, is the broad view of a number of people connected with the building and brick-making industries. p. 174

FIRE GRADING OF BUILDINGS

SINCE the war, most writers on fire precautions in buildings have complained in the most bitter terms of an apathy towards the subject as far as planners are concerned. Whether such apathy is born out of a lack of awareness of the seriousness of the problem or due to a confusion which shows itself all too clearly in the present approach, is a matter of conjecture, but, whatever the reason, it must be admitted that most architects are willing to satisfy the dictates of the authorities with little question and still less understanding. Now, for the first time, an attempt has been made to place the whole matter of fire precautions in proper perspective by the publication of the remaining parts of *" Fire Grading of Buildings."

Part I†, published in 1946, was confined to the structural fire precautions "desirable in new buildings to minimise the risk of loss of buildings and their contents." The present study, containing a further three parts, deals with the "additional precautions which are thought necessary to ensure the safety of the occupants in case of fire."

As in previous Post-war Building Studies, the work is the result of a committee appointed because of their particular interests, and in this case it is fully representative of the practical, theoretical and legislative aspects of the problems of fire and buildings. The complete work must be acknowledged at the outset as an important contribution, and, although it claims little more than a statement of the underlying principles, there can be little doubt that future legislation will be greatly influenced by its findings. Its aim appears to be a presentation in a critical manner of the whole field of influence as understood to-day, not only in this country but also in Canada and the United States. From the picture given conclusions are reached and recommendations made which will encourage a uniformity of approach and provide planners with greater flexibility by a better understanding of any authoritative demands which may be based upon it.

As might be expected with any research of this nature, not only are the findings of value but the inadequacies of knowledge on certain aspects become painfully clear and point the way to further patterns of research if the subject is to be kept up to date. Such an example may be found in the emphasis laid on the present need for setbacks or terraces at each floor level where a building exceeds 100 ft. in height. Architects have for some little time past fought against such requirements, knowing full well that in other countries similar demands are not made. Certainly the report mentions that investigation should be made into the matter as applied in the United States if the need arises, but it may be considered by many that the increasing demand to build more than the 100 ft. in height brings the problem into sharp relief even at the present time and the "need" has now in fact arisen. Emphasis is placed upon the necessity for quick detection of a fire at its inception to safeguard both the property and its occupants. This obvious request has not been adequately appreciated in the past although it is a happy thought to note that the incidental development of the "open plan" must contribute favourably towards an answer. One further point which has been neglected in the past is the need for good access to the building for fire fighting. The data given on the space requirements for escape ladders up to 100 ft. high cannot but influence planners in the right direction.

In Part III of the study, under the heading "Precautions Relating to Personal Safety," the arguments advanced previously in Post-war Building Study Number 20 on the occupancy characteristics and fire grading of buildings have been carried a stage further, and it is suggested that categories of building occupancy be established wherein "population characteristics" become the principal criteria. Thus, Group A includes all Assembly Buildings; Group B, Trade, Commercial and Industrial Buildings, and Group C, Residential and Institutional Buildings. The variation in population density within each group becomes recognised, and recommendations are given for dealing sensibly with public safety.

Perhaps the most vital section within this part deals with the problem of "Means of Escape." The data collected from various sources concerning movement of people are given and a lack of uniformity in behaviour is revealed. Clearly, this is a matter for further organised research if usable and reliable formulae are to be established. On the other hand, working within the severe limits of incomplete data, the committee have shown great restraint and reasonableness in resisting the obvious tendency to make recommendations based upon the most unfavourable conditions. This commendable attitude of mind is also discernible in the investigations made into "travel distances" inside buildings to exits, and instead of developing previous theories held in Britain and the United States the recommendations have been based more upon the fire-resistant qualities of the building itself. Staircases, too, both in number and position within the building, are the subject of much serious comment. Tabular information is given showing the permissible number of persons to use staircases of stated widths and from two to ten storeys high for each of the groups mentioned above.

The character of the study changes in the final part from the appraisal of the general problem of fire grading of buildings to the particular consideration of "Chimneys and Flues." The reason for such a change appears to be a need established by the committee for information on proper construction to

* Fire Grading of Buildings, Post-war Building Studies, No. 29.—Published by H.M.S.O., price 4s. 6d.

† Fire Grading of Buildings, Post-war Building Studies, No. 20. H.M.S.O., price 2s. 6d.

reduce the abnormal number of fires which have their origin in this part of a building.

There can be little doubt that the persons responsible for the study are to be congratulated on a piece of work which is both informative and useful. Such an approach to the problem can reduce whatever apathy has been present in the past, but the surest way of the subject achieving its obvious place in the mind of the planner is by recognition by schools of architecture, that the subject is no longer vague and conflicting in its demands, but has reached a high standard of sensible application and should be incorporated in the curriculum.

H. V. LANCHESTER

WITH the death of Dr. Henry Vaughan Lanchester, in his 90th year, the profession of architecture loses one of its oldest, most distinguished and most respected members. Although in a sense he was one of the last of the "Eminent Victorians"—he began to practise as long ago as 1889—there was little, if anything, that was distinctively Victorian in his make-up. He had a well-cultivated, vigorous and searching mind which lost nothing of its freshness of outlook with the passing years, as his many contributions to our columns have shown. He was writing as well as ever almost to the end, and contributed a characteristically lucid article—on the Aberdeen Planning Report—to our New Year number.

Most of his architectural work was carried out in partnership with other men, but all of it, notwithstanding progressive changes in expression, bore the stamp of his orderly and imaginative mind, particularly in its planning. He was a natural leader, knowing how to work with and draw the best out of others. Rickards, with whom he did some of his most notable work, including the great group of civic buildings in Cathays Park, Cardiff—perhaps the finest architectural product of the Edwardian era—once said: "I never did any good until I met Lanchester"—a remarkable tribute to a senior by one of the most brilliant designers of our time. The respect was mutual, as Lanchester showed in the generous appreciation of the younger man's genius which he contributed to the Rickards memorial volume.

Lanchester will be remembered not only as an architect but as a town planner. He was one of the first to appreciate the full implications of town planning in relation to twentieth-century developments, and he did much to advance the movement; writing, teaching, advising and practising.

He was Editor of *The Builder* from 1910 to 1912, and under his direction the appeal of the paper was widened and strengthened, notably by articles on the science and art of town planning. To journalism Lanchester brought the same breadth of mind, grasp of essentials, and organising ability that had won him success in architecture, and there is no doubt that had he chosen to do so he could have made a distinguished career in journalism; but the pressure of his town planning work in India compelled him to give up the appointment. In recent years, when increasing age had brought him more leisure, he gladly renewed his association with the paper and became one of our most valued contributors. With his ability as a writer he combined an alert sense of news values, and—mark of the true journalist—he was never late with his copy.

"A strikingly handsome man, dark-eyed and bearded, looking rather like a Spanish grandee of the age of Velasquez." So an obituarist has described him. Rarely can body and mind have been better matched. Full of years, an outstanding figure of our time has passed on. The deep sympathy of all who knew him will be with his widow and son in their bereavement.

ITALIAN MOSAIC WORK AT COVENTRY.—This mosaic commemorating the Coventry martyrs was recently completed by M. René Antonietti inside the entrance to a bridge leading to the first of the new buildings to be erected by Coventry Corporation in the central shopping precinct. Mr. Donald Gibson, C.B.E., A.R.I.B.A., is the City Architect.

NOTES & NEWS

MODULAR CO-ORDINATION

WHAT may prove to be a milestone on the road towards reduction of building costs will be reached this afternoon (Friday), when the inaugural public meeting of the proposed Modular Society will be held at the Royal Society of Arts' headquarters. The object of this society is to contribute towards lowering the cost of building by co-ordinating the dimensions of materials, components and fittings on a modular basis, and it should afford a common meeting ground for architects and other technicians, contractors, manufacturers and users to pool experience and needs, and to solve some of the difficult problems still outstanding. The Society (whose need, suggested by Mr. Mark Hartland Thomas in his recent Bossom lecture to the Royal Society of Arts, was endorsed by a large majority of those present at the meeting) is intended to supplement by direct industrial experience any Government research work that may be initiated under D.S.I.R. and the study of modular planning already under way at the British Standards Institution.

Invitations have already been sent to many architects, technicians and manufacturers, but the meeting (which will be held at the R.S.A. headquarters, John Adam-street, Adelphi, W.C.2, at 2.30 p.m.) will also be open to any person, in an individual position or representing a firm, interested in the objects of the Modular Society.

A YEAR OF DISTINCTION

ON TUESDAY LAST Mr. David Woodbine Parish laid down one of the most onerous burdens which a man can carry, the active Presidency of an association connected with building. Mr. Parish's year of office as President of the L.M.B.A. has been one of high distinction, and the benefit of his objective thinking will be felt in the future, just as the practical and energetic lead he has given in matters of more immediate concern has inspired the Association and its regions. The L.M.B.A. as a Metropolitan body has a peculiar function to play in the great national organisation of which it is part; under Mr. Parish, latest in a line of exceptional Presidents, the Association has kept the London builders' flag flying high, though never at the expense of national unity.

It is the fate of regional Past-Presidents to go into hibernation while awaiting a call to national duties, but we shall hope that Mr. Parish's particular genius for developing efficiency in building through education will not be allowed to rust, and that those Institutes which have their being in building education will give opportunity to this talent. We wish Mr. Gerald Hill, who takes up the Presidential office, every success in his important task of leading the Association's destinies in the coming year.

SLUM CLEARANCE IN LONDON

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, met members of the London County Council and of the Metropolitan Boroughs Standing Joint Committee on January 15 to discuss future slum clearance action in the County of London. The meeting explored possible ways of simplifying procedure and hastening action on slum clearance work. The ideas thrown up by the discussion are to be examined by officials of the two sides.

London Building By-laws

New by-laws governing construction within the area of the London County Council—London Building (Constructional) By-laws, 1952 — came into operation on January 1 last. We have invited Mr. M. C. G. Ayre to prepare some notes indicating the main differences between the new by-laws and the 1937 code, and his first article appears in this issue.

R.I.B.A. PRIZES: 1954 CRITICISM

ON the invitation of the President of the R.I.B.A., Mr. Basil Spence, O.B.E., A.R.S.A., F.R.I.B.A., has undertaken to give the criticism of the drawings submitted in competition for the R.I.B.A. Prizes and Studentships, 1953-1954.

CARE OF CHURCHES

THE COURSE on the Care of Churches, which is being held in York from April 9 to 16, has been over-subscribed and no more applications can be considered. We are informed that there are still a few vacancies for the fortnight's general course, March 23 to April 4. Applications should be sent to the Secretary, St. Anthony's Hall, York.

HARVARD APPOINTMENT

DR. WALTER GROPIUS, Professor of Architecture at Harvard University, is to be succeeded on his coming retirement by Mr. José Luis Sert, president of the Congrès Internationaux d'Architecture Moderne.

PLANNING EXPERTS' VISIT

FIVE overseas town planning experts, who have been awarded United Nations Social Welfare Fellowships, are at present visiting the United Kingdom, and the British Council is arranging programmes of study for them in conjunction with government departments, local authorities and other organisations.

Three of them are from Israel: Messrs. M. Yaron, Hanan Pavell and E. A. Alpeled. They are spending two months here before going on to France and the Netherlands. The others are Mr. Chin Yong Chang, of Formosa, and Mr. Carlos Arbelaez, Colombia. The British Council has arranged a programme of talks and visits to give them a general outline of the central and local government system in relation to housing and town planning. They will also visit some of the New Towns near London before going to the north of England and Scotland.

CORONATION COMPETITION

THE competition promoted by the City of Chichester for Coronation street decorations has been won by Mr. R. Lewis Reynish, F.R.I.B.A., of Southsea.

COMING EVENTS

FRIDAY, JANUARY 23

INSTITUTION OF SANITARY ENGINEERS (N.W. DISTRICT).—Film show. College of Technology Annexe, Sackville-street, Manchester. 7 p.m.

THE MODULAR SOCIETY.—Inaugural Public Meeting. Royal Society of Arts, John Adam-street, Adelphi, W.C.2. 2.30 p.m.

TUESDAY, JANUARY 27

INSTITUTE OF REGISTERED ARCHITECTS.—Talk on work of National Trust, by Mr. C. V. Wallace. Royal Society of Arts, John Adam-street, W.C.2. 7 p.m.

R.I.C.S.—Annual conference of agricultural members. 12, Great George-street, S.W.1. 11.15 a.m.

FEDERATION OF CLINKER BLOCK MANUFACTURERS.—Fourth Annual General Meeting and Luncheon. The Holborn Restaurant, W.C.2. 1 p.m.

N.F.B.T.E.—Annual Dinner. Dorchester Hotel, W.1. 7 p.m.

WEDNESDAY, JANUARY 28

ARCHITECTURAL ASSOCIATION.—"The Trend of Education in the Building Industry," by Mr. D. E. Woodbine Parish. 34, Bedford-square, W.C.1. 8 p.m.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS. — A.G.M. Liverpool Victoria Friendly Society's Building, Bloomsbury-square, W.C.1. 10.30 a.m.

ARCHITECTURAL ASSOCIATION. — Exhibition of photographs by members. 34, Bedford-square, W.C.1. Continuing until February 20.

ELECTRICAL CONTRACTORS' ASSOCIATION. — Annual dinner. Grosvenor House, Park-lane, W.1. 7 p.m.

THURSDAY, JANUARY 29

TOWN AND COUNTRY PLANNING ASSOCIATION (STUDENT PLANNING GROUP).—"Landscape Projects Connected with Mineral Workings," by Sheila M. Haywood, A.R.I.B.A., A.I.L.A. 28, King-street, W.C.2. 6.30 p.m.

INDUSTRIAL WELFARE SOCIETY.—Course on "Introducing an Apprenticeship Training Scheme." Robert Hyde House, Bryanston-square, W.1. 9.30 a.m.

FRIDAY, JANUARY 30

BIRMINGHAM AND FIVE COUNTIES A.A.—Annual dinner and dance. Grand Hotel, Birmingham.

GUILDFORD TECHNICAL COLLEGE AND SCHOOL OF ART.—Sixth annual prize-giving and exhibition of work by building students. Guildford House, High-street, Guildford. 7.30 p.m.

SATURDAY, JANUARY 31

ECCLESIOLOGICAL SOCIETY.—"Churches of Victorian London," by Mr. John Summerson, C.B.E., F.S.A., A.R.I.B.A. 2, Bloomsbury-square, W.C.1. 3 p.m.

PROFESSIONAL ANNOUNCEMENTS

MR. GEORGE J. JOLLY, F.R.I.B.A., A.I.A.A., and MR. ROBERT G. GRANT, A.R.I.C.S., of Messrs. ERNEST J. THOMAS, JOLLY AND GRANT, Coronation House, King's-terrace, Portsmouth, chartered architects and quantity surveyors, have taken MR. NORMAN G. KELSEY, A.R.I.B.A., into partnership as from January 1 last. The style of the firm remains unchanged.

MR. WM. C. CASSÉ, L.R.I.B.A., F.I.A.S., has taken over the practice of Messrs. Pratt, Blount, and Cooper, chartered architects, of 174, High-street, Acton, W.3, as from December 24 last.

MR. C. R. WHEELER, A.R.I.C.S., chartered quantity surveyor, has commenced in practice on his own account at 190, Victoria-street, S.W.1. (Tel.: Victoria 9953/4), where he will be pleased to receive trade catalogues.

MESSRS. CAMERON AND MIDDLETON, chartered quantity surveyors, of 38, Bedford-square, W.C.1, are opening a branch practice in South Africa, at Maurcon House, Barrack-street, Capetown.

MESSRS. C. T. R. KELLY AND PARTNERS, chartered quantity surveyors, have moved from 29, Adam and Eve Mews, Kensington, W.8, to 36, Seymour-street, London, W.1 (Tel.: Ambassador 1146/7).

FROM "THE BUILDER" OF 1853

Saturday, January 22, 1853

EFFECT OF SMOKE IN THE DESTRUCTION OF ARCHITECTURE.—At a civil banquet recently given by the Lord Mayor of York, the Rev. Wm. Vernon Harcourt stated that within a recollection of some 40 years he had seen parts of York Minster perfectly restored, which are now sensibly defaced. He said that where the air is impregnated with smoke, and with the other products of imperfect combustion, no material can resist its corrosive power, and instanced marble, glass, and even slate itself, of the rapid perishing of which there have been remarkable examples in London.

CORRESPONDENCE

LEANING JAMBS

To the Editor of *The Builder*

SIR,—I have been as much puzzled as Mr. Kenneth Glover about the purpose of the leaning jambs to which he called attention in your last issue, and have thought that they must be intended to keep off driving lateral rain from entrances; but if that were their purpose it would surely be better to make them upright instead of sloping.

Other features of contemporary design are equally puzzling—for example, the sun baffles which are so often introduced around school windows. In northern latitudes such as ours, where the sun is a comparatively rare visitor, one would have thought that every effort would be made to welcome it instead of shutting it out. These baffles are unnecessary. When the sun becomes a bit too persistent, as it does occasionally, it can be quite effectively dealt with by means of blinds. Have we yet improved on the old-fashioned Venetian blind?

Window surrounds projecting from the wall surface are also something of a mystery. One could understand it if they were applied consistently, but it is quite a common thing to find them used to emphasise certain windows only, others being either flush or recessed. Perhaps their purpose is contrast, but if that is so the effect is very restless.

Another peculiarity of contemporary design is the treatment of some part of an elevation in a completely different way from the rest, producing the effect of a façade within a façade. I have rarely seen any real planning justification for this treatment.

While many doubtful innovations are being introduced, traditional practices of proved efficiency are being abandoned. I know of a building erected last year in which the front gable wall has neither coping nor roof overhang, with the result that the upper brickwork becomes completely saturated after a short period of rain.

Many of these contemporary developments seem to me to be little more than draughtsmen's tricks introduced for the sake of fashionable effect. We should do well to get back to practical design.

G. J.

THE COST OF TENDERING

To the Editor of *The Builder*

SIR,—I do feel that there is a very good case for the inclusion of an amount in any contract to compensate unsuccessful tenderers. The building owner has obviously enjoyed a service from these contractors, as it serves as an indication to him of a fair price for the job. If he did not desire this information he would only invite one tender. There is also the case where many contractors are asked for a price, and eventually the owner decides not to go forward. Under present circumstances he has then received a service absolutely free of charge, and not even one tenderer has had the opportunity to recoup his costs.

However, there must be safeguards in any scheme of recoupment. I feel that the unsuccessful contractors must be asked to prove that they did in fact prepare a proper estimate, the documents being delivered to the owner and arrangements made for them to be returned at a later date. I know that some contractors would not wish to do this, but I do think that if they refused then the owner could withhold his payment. The possibility of a contractor taking a cover price and claiming the cost of preparation of the estimate must be avoided.

Such a scheme would not be easy to put into practice or to operate, as some employers might adopt it and some might not, but if it can be done, then, when tenders are invited, the figure offered as compensation for the preparation of the estimate should be stated.

Have other readers ideas on this subject?

VICTOR H. FERN.

21, Tettenhall-road,
Wolverhampton.

To the Editor of *The Builder*

SIR,—May I be one of many who, I hope, will offer congratulations and thanks to Mr. D. E. Harrington on his suggestion for the easy and equitable solution of the problem of meeting the cost of tendering. It is gratifying, to say the least, that some members of the R.I.B.A. appreciate that contractors are entitled to recover their costs for preparing and submitting tenders.

May I suggest that if the R.I.B.A. and N.F.B.T.E. had tackled this problem as they should have done, years ago, on the lines suggested by Mr. Harrington, there would have been no need for the existence of the London Builders' Conference, so that whatever criticism may be made against its methods, if its existence brings about action by the R.I.B.A. and N.F.B.T.E., it should receive the grateful thanks of all concerned with the building industry, architects, quantity surveyors and contractors alike.

R. B. BURDEN.

Staines-road, Hounslow.

THE COST OF BUILDING

To the Editor of *The Builder*

SIR,—As a craftsman in building and civil engineering who has had the opportunity of working with well over 1,000 architects and surveyors throughout the country on schemes of magnitude, in traditional and "new thought" building, I venture to suggest that the letter from Mr. John Carter, A.R.I.B.A., of Bristol, in your issue of January 16, is one of the most learned contributions concerned with building published in your newspaper since its inception; indeed, it is superb!

ROBERT G. TARRAN.

Hull.

A CONTRACT POINT

To the Editor of *The Builder*

SIR,—Your inquirer "W.J.M." [*The Builder*, January 9, p. 99] has raised a nice point, but I do not think your legal correspondent has helped very materially.

No court would allow an argument which invokes a clause of a contract (27 or any other) and which concludes by suggesting that the items in dispute are not covered by the contract.

From "W.J.M.'s" inquiry, and assuming that the architect has ordered the extra work in accordance with the "employer's" instructions, then both parties have accepted the work as under the contract and the contractor has already waived his undoubted rights of refusal by applying for payment under the contract.

What does the R.I.B.A. Form of Contract provide?

Clause 9, which has been invoked by the architect, relates to variations "and the valuation thereof unless previously or otherwise agreed shall be made . . ."

It is therefore a clause defining the method to be adopted for valuing variations and is not related in any way to "interim certificates."

It does say that the priced "bills of variations . . . shall be supplied . . . before the architect's certificate in respect of such variations . . ."

It may be noted that this wording does not refer to "interim certificates."

Clause 9 is therefore solely concerned with "methods of valuation" and the only references to "methods of payment" are contained in Clause 24.

Subject to various provisions which are not relevant to this dispute this clause states: "(*a*) The amount so due shall . . . be the total value of the work properly executed . . ."

It would appear that any material deviation from the intention of this clause without the consent of the contractor must result in a breach of contract, in which case the contractor can have recourse to arbitration as suggested.

If one switches the dispute to a case where variations result in a series of major savings one can see that the argument that no account should be taken of these in interim certificates could result in serious over-payment to the contractor.

I do hope that others of your readers will add their views on this interesting point.

RONALD L. BREWIS [F.I.A.S.].

12, Cathedral-road,
Cardiff.

Our Legal Correspondent writes: Referring to Mr. Benwell's letter in your last issue, may I observe that the point at issue is "extensive" variations, that is variations of such a nature and extent as to definitely affect

"I was chairman of the Board of Directors till I heard about the new rates for building operatives!"

the contract work as contemplated under the contract. The position as I see it is this :—The contract means that the builder will do certain work as covered by the designs and quantities (which have been signed by the parties), and subject also to the conditions. One of these conditions is that if the architect (it must be assumed after consultation with his client, especially if extra cost is concerned) varies the original concept of the work in regard to the *manner* in which it is to be executed, then the builder is to accept such variation (if in writing), subject to any dispute being submitted to the arbitrator under Clause 27 of this particular contract. Should the builder be put to extra expense in carrying out the architect's instructions, such extra expense is to be added to the contract sum (or deducted in the case of an " omission ").

It follows, I submit, that in regard to " extensive variations " (extras particularly), which were not in the contemplation of the builder when the contract was entered, these should be the subject of a subsidiary contract or contracts in which the payment (by interim certificates, say) is clearly understood and agreed between the parties.

If this view be not the correct one, and the architect's power to order variations within the framework of the contract is unlimited, what would be the position if the architect ordered " omissions " (the other kind of variation) to such an extent as to reduce a large profit-making contract to a somewhat minor one, wherein the contract sum would be reduced by the value of the omissions properly ordered ? Would builders contract under such circumstances ?

May I add that I am in agreement with much of Mr. Brewis's letter, above, and, I think, the interest taken in regard to this particular point of contract law is welcome.

I should also like to observe that no form of building contract is perfect, and that there are matters that arise in *practice* that could give rise to disputes which are often avoided by the architect giving (and the parties accepting) an equitable decision on the matter, i.e., one which is fully within the scope of his authority as agent and also holds the scales fairly as between the two contracting parties.

SEDDING AND HIS SUCCESSORS

To the Editor of *The Builder*

SIR,—Your correspondent, Mr. H. V. Molesworth Roberts, writing in *The Builder* of January 9, mentions Edmund H. Sedding, Junr., as being the author of " Norman Architecture in Cornwall," in which surmise he is correct.

As a very young pupil, I remember the firm of Sedding and Stallibrass practising in Queen Ann-terrace, Plymouth. The firm were known for their Gothic work in the West Country and Mr. Sedding for his work on Norman Architecture in Cornwall.

LIONEL F. VANSTONE [L.R.I.B.A.]
11, Grimstone-terrace,
Plymouth.

TRAVELLING MONEY AND P.A.Y.E.

To the Editor of *The Builder*

SIR,—I shall be grateful if you will allow me to correct a misapprehension which may, I think, arise in the minds of those reading the letter on this subject in your issue of January 16 from the Foven Construction Co., Ltd.

That letter refers to " Rule 6A of the Working Rule Agreement." It should be pointed out, however, that the Rule to which reference is made is Rule 6A of the Working Rule Agreement for the London District, the travelling allowances under which are calculated in a manner quite different from those payable under the National Working Rule Agreement. When the present London travelling rule was introduced at the beginning of 1947, this Association had discussions with the Inland Revenue on the subject of tax on the amounts payable under the rule, and all members of the Association were advised in April, 1947, of the decision by the Revenue that the time allowance referred to in paragraph (1) of the rule was regarded as assessable to income tax, being an additional emolument payable to an employee solely by virtue of his employment. The allowance for fares for journeys in excess of four miles, also referred to in the same paragraph, is not, however, regarded as assessable.

The matter was again brought to the notice of members in 1951, when the allowance payable under the rule was amended in respect of operatives employed in premises covered by the Supplementary Rules for Woodworking Factories and Shops.

R. E. STENNING, Secretary,
London Master Builders' Association.
47, Bedford-square, W.C.1.

PRICES OF ADVERTISED PLANT AND MATERIALS

To the Editor of *The Builder*

SIR,—Why are suppliers to the building trade frightened to price the plant and materials referred to in their advertisements ? I had three sheets in connection with a most interesting pipe bender in by this morning's post (January 12), but as no price was mentioned they were consigned straight to the waste paper basket.

GERALD W. NOTLEY.
1, High-street, West Wickham, Kent.

CHRISTMAS GIFTS

To the Editor of *The Builder*

SIR,—In your issue of January 9, " Disgusted's " interpretation of Christmas gifts leaves a bitter taste in the mouth and causes me to look for an alternative explanation of his views. I am not a director of one of the larger builders' merchants as he is, and therefore cannot appreciate fully the cost of such self-styled bribery. But I find his views both revolting and ridiculous ! To explain : must bribery only occur at Christmas ? What a singular time to bribe when a Christmas gift would obtain more publicity than a secretive bribe ! What a low estimate of honour would be placed upon the recipient of that bribe if such were true ! A couple of theatre tickets ! I am indeed flattered ! Your kill-joy correspondent could attribute a hypocritical motive to all pleasurable acts and perhaps thoroughly enjoy himself, but he cannot convince and lower others to his standard.

May I suggest to " Disgusted " that he should not measure others' corn with his own bushel ?

ESPÉRÈ.

The Cost of Building

" THE BUILDER " CHART

THE " Cost of Building " Chart, showing variations in Wages, Materials and Building Costs from 1939 to date—prepared by Mr. H. J. Venning, F.R.I.C.S., and published in our issue of January 9—has been reprinted on stout card. Price 6d. each, the reprint is obtainable from the Publisher, *The Builder*, The Builder House, Catherine-street, Aldwych, W.C.2. 3d. postage should be added for any number of charts up to 12. Orders in excess of that number will be sent post free.

COMPETITION NEWS

HOSPITAL AT DOHA, PERSIAN GULF

THE Government of Qatar, Persian Gulf, invite architects to submit designs for a 100-bed hospital, complete with staff quarters, at Doha. The assessor is Mr. Alexander S. Gray, F.R.I.B.A., of Messrs. W. H. Watkins, Gray and Partners, and premiums offered are £1,250, £1,000 and £750. The last day for submitting designs is August 15 next, and the last day for questions, March 31.

Conditions may be obtained on application, with deposit of three guineas, to Captain J. E. Stone, C.B.E., M.C., F.S.A.A., Hon. Secretary and Treasurer, International Hospitals Federation, 10, Old Jewry, E.C.2. Envelopes to be marked " Doha Competition."

Conditions will be available after January 30.

NATIONAL GALLERY OF CANADA

PREPARATIONS are being made in Ottawa, we understand, to hold a national competition to choose an architect for a new National Gallery of Canada which is to be built there.

The annual report of the board of trustees states that at present the National Gallery is operating under the most trying conditions in a building " whose space is hopelessly cramped and whose facilities are 40 years out of date."

The new building will provide for an expansion of the gallery's work and enable it to fulfil the recommendations of the Massey report (which dealt with the improvement of facilities in the fields of art, science and letters).

It would also assist considerably in catering for the " great upsurge of public concern for cultural values " to which the trustees refer.

OLYMPIC POOL, MELBOURNE

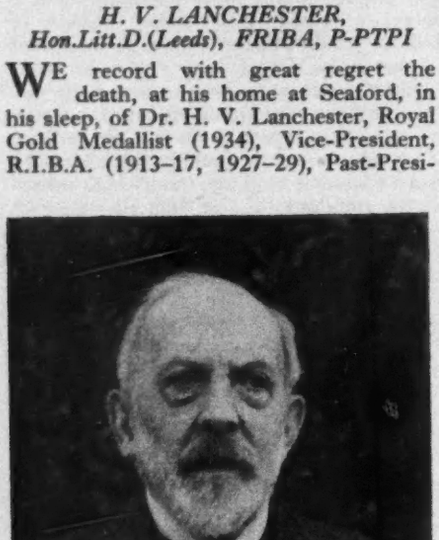
A GROUP of four Melbourne architects and an engineer have won the competition for the design of an Olympic Pool for the 1956 Olympic Games in Melbourne. The architects are Mr. and Mrs. John Murphy, Mr. Peter McIntyre, and Mr. Kevin Borland, and they were assisted by a structural engineer, Mr. W. Irwin.

The winning design was chosen from 72 entries received from all over Australia. It provides for seating accommodation for 6,000 people. The building will be 60 ft. high, 340 ft. long, 220 ft. wide at the top and 100 ft. wide at the bottom.

OBITUARY

H. V. LANCHESTER, Hon.Litt.D.(Leeds), FRIBA, P-PTPI

WE record with great regret the death, at his home at Seaford, in his sleep, of Dr. H. V. Lanchester, Royal Gold Medallist (1934), Vice-President, R.I.B.A. (1913–17, 1927–29), Past-President and a founder of the Town Planning Institute and Editor of *The Builder*, from 1910–12. He was in his 90th year.



Henry Vaughan Lanchester.

Henry Vaughan Lanchester, senior partner of Messrs. Lanchester and Lodge, was born on August 9, 1863, at St. John's Wood, London. After a private education he became a pupil of his father, Henry Jones Lanchester, architect, of London and Brighton. He later served as an assistant in the offices of F. J. Eadle, T. W. Cutler and George Sherrin.

He started in private practice on his own account in 1887 at the age of 24, and two years later was awarded the Owen Jones Studentship. During his long professional career he had many partners among whom should be recorded the names of E. A. Rickards—whose work as a draughtsman and designer of detail has never been surpassed, and is shown to so great advantage in the Cardiff Municipal buildings and the Central Hall, Westminster—and his own son Henry Robert Lanchester, who was in the firm as a partner for a short time only, owing to his tragic death in the Second World War.

Dr. Lanchester was a very great planner, and throughout the whole of his career this was reflected in the firm's achievements in the competition world. The list of these successes must establish a record including as it did, in conjunction with his various partners, the following buildings: Cardiff Town Hall and Law Courts; Deptford Town Hall; Central Hall, Westminster; Third Church of Christ Scientist, London; Leeds University; Sheffield University; Beckenham Town Hall; Birmingham Hospitals Centre; Birmingham Medical School; Hackney Town Hall; and Bolton Technical College. In addition he received premiums in many more. He also assessed no fewer than 11 competitions.

His firm's other important works in this country include: The reconstruction of St. Bartholomew's Hospital and Medical School; science buildings at Oxford, Cambridge and Belfast Universities; hospital work at Taunton, Stockton and Burton-on-Trent; technical colleges at Watford and Reading; research buildings (including the Cancer Research Station; Rayon Research Centre; Institute of Animal Physiology; Grassland Research Station; East Malling Research Station; Royal College of Surgeons; and Esso Refinery, Fawley); factory and offices for Messrs. Bovril; Colnaghi and Obachi's shop in Bond Street; and much housing.

Dr. Lanchester took a particular interest in India, and in that country the buildings erected by his firm included the Palace for H.H. The Maharajah of Jodhpur (illustrated in *The Builder* of Jan. 13, 1950); in Lucknow the Secretariat, Post Office and other buildings; and the Birkmyre Hostel in Calcutta. He was one of the founders of the Town Planning Institute, of which he later became President, and wrote several books on this subject including "Talks on Town Planning," "Town Planning in Madras," "The Art of Town Planning," etc. He also wrote "Fischer von Erlach." In the capacity of consultant he advised on the planning of New Delhi, Madras, and the new buildings for the University of London. In addition he advised H.H. The Maharajah of Baroda on the development of an estate at Umrath.

Dr. Lanchester was a Fellow and Past Vice-President of the R.I.B.A., and received the R.I.B.A. Gold Medal in 1934. He was holder of the R.I.B.A. Distinction in Town Planning. He became the first President of the South-Eastern Society of Architects. He was a Past-President of the Town Planning Institute and in 1936 was honoured by the University of Leeds by the conferment of the Honorary Degree of Doctor of Letters (Litt.D.).

TWO TRIBUTES

DR. T. A. LODGE, O.B.E., Hon.Litt.D. (Leeds), F.R.I.B.A., writes:—

"Having been Dr. Lanchester's partner for the past 30 years, few can realise more than I do that he was a man of very exceptional character and ability, with an unlimited capacity for work. Not only was he a master of the art of planning of buildings but was able to turn his mind to solving problems of traffic control, road signs, railway organisation and even the making of toys out of waste materials for evacuated children during the last war.

"The speed at which his mind worked was tremendous, and I have known him plan a large building during a week-end. He was a great teacher, and those who have had the privilege of serving under him have benefited greatly. He was beyond the age for military service during both world wars but his activities never slackened.

"He took no great interest in games or sport but his main recreation was reading and writing and the love of his books. Nothing ever appeared to worry him, and the more difficult a problem the better he would like it. When drawing, the smoke of a cigarette and the faint sound of a song being hummed were characteristic of his concentration. By these characteristics I shall always remember him. Despite his great age he never retired and remained keenly interested in the firm's works and his writings to the end."

SIR IAN MACALISTER, M.A.(Oxon), Hon. A.R.I.B.A., writes:

"The news of the death of H. V. Lanchester came as a sad shock to me. Old as he was, he seemed almost immortal and his mind was as active as ever right down to his 90th year. Lanchester really was a unique figure in the architectural profession. It was not only the enormous volume of varied work that he carried out for over half a century, though that alone made him stand out in the highest rank of his contemporaries. It was the peculiar character of the man. He was perhaps the most independent minded man I have ever known. He never took his opinions and ideas from other people. He had the supreme self-confidence that enabled him to go his own way whether or not others were on the same road. His ability as an architect and planner was quite outstanding. You could not discuss anything with him without realising the absolute independence and self-reliance of his character. He was no respecter of persons and could always be depended upon to say exactly what he thought, though he might be in a minority of one. It did not make him a good 'committee man' because he knew when he was right and he was quite fearless about other people's opinions if they differed from his.

"A succession of small accidents alone prevented him from becoming the figure head of the profession as President of the R.I.B.A., but he gained an honour that meant more to him—the Royal Gold Medal.

"Lanchester was a leading member of the R.I.B.A. Council when I first came in contact with that body just 46 years ago. Even then he had a record of successful work that very few could match. Honours and responsibilities fell thick upon him. He was adviser to the Government of India on the site of New Delhi. He was one of the founders of the Town Planning Institute, and became its President in 1922-23. He was an active member of the National Housing and Town Planning Council. He acted as Examiner in Town Planning at the Universities of Liverpool and London, and he served the R.I.B.A. in a great variety of ways. He was elected A.R.I.B.A. in 1889, Fellow in 1906, and Vice-President in 1913. Apart from his purely professional activities, he was a distinguished writer and lecturer. He was one of the jury of five which judged the competition for the new R.I.B.A. buildings in 1932, and gave the decision in favour of Mr. Grey Wornum, who followed him as a recipient of the Royal Gold Medal a few months ago. He married in 1909 Annie Gilchrist, daughter of Robert Martin, who survives him with one son of the marriage."

J. R. MEWTON, FRIBA

WE REGRET to announce the death of Mr. J. R. Mewton, F.R.I.B.A., which occurred at his daughter's home in Newcastle-on-Tyne. He was 77 years of age.

Mr. Mewton designed many buildings both in Carlisle and on Merseyside, including the Birkenhead Tapestry Works, one of the Carnegie Libraries and several buildings for the Birkenhead Corporation. His real interest lay in domestic architecture, and just previous to the last war he built a number of houses in Wirral. Since the war his intimate knowledge of old Liverpool had been invaluable to the War Damage Commission and the Inland Revenue, but illness made it necessary for him to give up professional work in 1950 and retire.

DAVID ALEXANDER ADAM, LRIBA

WE REGRET to announce the death of Mr. David Alexander Adam, L.R.I.B.A., of Mill Hill, N.W.7.

CHANGE OF ADDRESS

THE LONDON SOCIETY have transferred their offices. From Pall Mall they have moved to 3, Dean's Yard, Westminster, S.W.1. The new telephone number is Abbey 1562.

THE DEVELOPMENT OF MODERN ENGLISH CHURCH DESIGN (1)

By PAMELA M. CUNNINGTON, ARIBA

The following article is extracted from a paper given by Miss Cunnington, at a meeting of the Ecclesiological Society in London early last year. The paper dealt with church design from the 19th century onwards, but for reasons of space the earlier parts have had to be omitted and attention is concentrated on developments during the present century.

CHURCH building to-day is practically at a standstill. This is, perhaps, a suitable time to look back on recent trends and developments, and to find out, if we can, along what lines church design is likely to develop in the future.

It is probably true that the influence of tradition is stronger in the design of churches than in any other class of buildings. Church design in this country has been, on the whole, a gradual development, with new ideas being slowly absorbed. There have, however, been two major exceptions to this rule; two events which amounted to revolutions in religious thought, and, consequently, in religious architecture.

The effects on church design of the Reformation and subsequent Puritan influence are widely known. The change was abrupt. Traditional ceremonial no longer governed the planning. Although the services of the church were still generally rendered in a seemly and dignified manner, anything resembling the pre-Reformation ceremonial would have aroused strong opposition and suspicion in the minds of the people. In spite of the English reputation for conservatism, these striking changes in religious art, music, and ceremonial were accepted in a surprisingly short time.

After this, however, little change took place for nearly three hundred years. New churches were built, and old ones refurnished in a style based largely upon that of Wren's City churches. The type of services held at the beginning of the nineteenth century differed very little from that of the seventeenth.

Yet it was at this period that the second "revolution" was to make itself felt throughout the whole of the English Church—the Catholic revival of the nineteenth century.

There is a tendency among modern students of church design to ignore the Victorian period, or to treat it as an unpleasant interlude that is now closed, and is best forgotten; and to assert that in our modern church design we are now picking up the threads of eighteenth-century tradition, which were lost in the wilderness of the Gothic Revival. This is a most unrealistic attitude. However we might wish to ignore the nineteenth century, the fact remains that its influence on modern church design is stronger than that of any earlier period.

The majority of our churches, at any rate in the larger towns, were built by the Victorians, and many other churches—unfortunately—show evidence of their work.

It is therefore important, when considering modern church design, to look for its origins in the architecture of the Oxford Movement. A study of the period will show that, whatever we may think of its manifestations, it never deserved the description—so often heard—of "dead revivalism."

THE TWENTIETH CENTURY

A new stimulus to church designers, especially those of the "Gothic" school, was given during the early years of the twentieth century by the work of Percy Dearmer at St. Mary, Primrose Hill, and Conrad Noel at Thaxted. They encountered the "Italian" fashion with a new medievalism—very different from that of the Victorians.

They declared that the English Church had a cult of its own—distinct from Continental innovations—and frowned on the introduction of the "Western Use," when the ceremonial of the pre-Reformation English Church was so closely related to the services of the English Prayer Book.

A surpliced choir in the chancel was not in the tradition of the parish church, and the appearance of the chancel was immensely improved when the choir stalls were removed. The strictly medieval position for the choir and organ was the rood-loft. If a church possessed no loft, the best position would be in a transept or gallery rather than the chancel.

For the elaborate Victorian altar, with its ornate reredos, its gradines bearing collections of ornaments, flower vases, seven-branched candlesticks with sham candles, and its red velvet hangings—was substituted the traditional "English altar," with plain dorsal and riddel curtains. The altar should be equal in length to the east window. The chancel should not be excessively raised.

In "The Parson's Handbook" Dearmer expounded his views on Architecture and Ceremonial. They were soon widely followed and Italian influence began to decline. At this period, as always, architecture and ceremonial were closely linked.

Restorations of ancient churches were now far more conservative. Renaissance work was, however, not generally appreciated.

Several of Wren's City churches were demolished, and the sites sold to raise money for building suburban churches. This was quite unjustifiable, even when the new churches were themselves of good design—and this was not invariably so. The Society for the Protection of Ancient Buildings was gradually extending its influence, and vandalism met with increasing opposition.

The early twentieth century was an interesting period of church design—reflecting Edwardian prosperity and resourcefulness. The war of 1914 brought it abruptly to a close.

BETWEEN THE WARS

After the 1914-18 war, conditions changed considerably. Large new housing areas grew up in a few years and churches had to be built for them. There was less money in the hands of the private patrons who had financed church building during the earlier years of the century.

History was repeating itself. The church authorities found, like their predecessors a hundred years earlier, that churches had to be built comparatively quickly and cheaply in these new centres.

In the years following the 1914-18 war, therefore, there was another phase of church building, similar in many ways to that following the Napoleonic wars. Again, this coincided with a period of social upheaval. There were, however, marked differences between these two phases.

In the early nineteenth century, the first steps in Church building were taken by the State. They had, in fact, a political significance. It was hoped that the influence of the Church would serve to counteract the subversive influence of the revolution on the Continent. The churches thus built were spacious, soundly

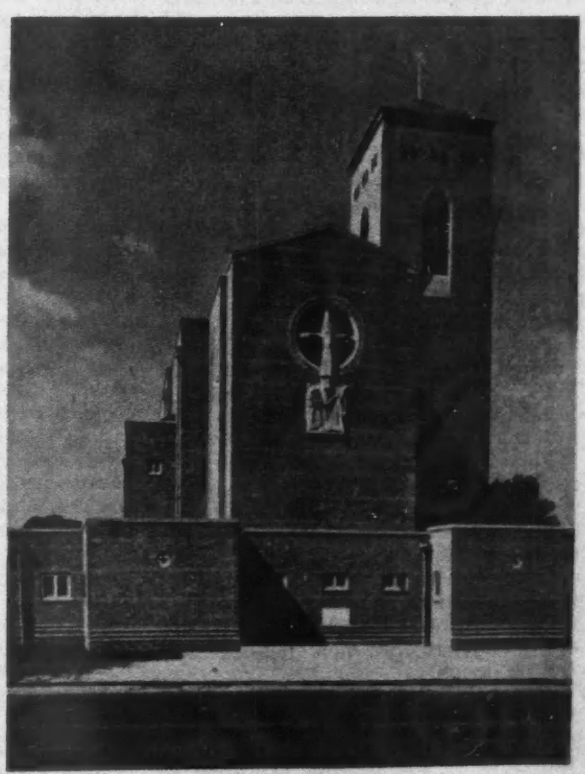


Fig. 1. St. Thomas's, Hanwell, by Edward Maufe, R.A., F.R.I.B.A.

constructed, and reasonable, if not outstanding, in design. They were soon, however, to be rendered completely out of date, and in need of considerable rearrangement, by the fervent propaganda of the Ecclesiologists. The builders of the "Commissioners' Churches," and their immediate successors, were handicapped in having no living tradition upon which to base their designs. Early voluntary efforts at church building met with heated opposition.

The position was very different at the end of the first world war. Church building was no longer the concern of Parliament. All necessary money had to be raised by voluntary means. Church builders were no longer greeted with hostile opposition, although the apathy they encountered was often equally discouraging.

The Edwardian period had been marked by a desire to experiment in church design. This tendency increased after the war. In some cases, the aim appeared to be novelty at all costs, and with little regard to reason, but in most cases there was a sincere effort to build churches in accordance with contemporary needs.

These needs varied immensely throughout the country. In some districts a full "cathedral" service was possible and desirable, and a traditional church plan was the best solution. In others, only the simplest mission services could be held, and there were no funds for a permanent church. The mission churches are some of the most interesting of the period. In many cases, one building was used both for worship, and for social functions, and a seemly arrangement was essential. In these buildings there was less tendency to retain traditional arrangements for their own sake—when some modification would be preferable. People were less likely to object to an unconventional arrangement in a building which was considered simply as a temporary church.

POPULARITY OF THE BASILICAN PLAN

The basilican plan—with the altar dominating the nave—was still popular in some circles. Sir J. N. Comper has been the leading modern advocate of this plan. On the whole, however, Percy Dearmer's influence has been more widespread, even in churches where the full "Sarum Use" has not been adopted. The general feeling among English church designers was still that "Chancels shall remain as they have done in times past."

The reaction against Victorian work was complete. In some cases perhaps it went too far. Churches built since 1920, however, have been refreshingly free from the heavy stained glass and the dark walls covered with sacred monograms or conventional designs, which were once considered essentially ecclesiastical. Light and space were once more appreciated in church design.

Conrad Noel's work at Thaxted Church had a most important influence on modern designs. Here for the first time were put into practice the theories expressed by Dearmer in "The Parson's Handbook." His description of the church when he first saw it in 1910 speaks for itself:

"... it was mouldy, with curtains adorned with a pattern of IHS, and although chairs had supplanted the old panelled benches in the nave, the matting beneath them was damp and gave out an unpleasant odour. Before each chair was an equally mouldy Bible box upholstered in some dark material. ... The altars were adorned with fretwork tiers of shelves with Brummagem brass candlesticks whose candles were seldom, if ever, lit. ..."

To-day, this church is justly famous.

Not only was there a marked change in the design of new churches. Medieval and now Renaissance churches were treated with care and respect. The formation of the Central Council for the care of Churches, and the various Diocesan Advisory Committees set new standards, and kept a watchful eye on well-meaning, but often ill-informed, Church Councils.

The greatest danger in these years was that good taste and restraint might so dominate church design that all vigour and character would be lost. This was, perhaps, an inevitable reaction. Many of our modern churches, however, are sadly unconvincing with their whitened walls (often stained by unsuitable heating appliances), light oak furnishings, and pale blue hangings.

Meanwhile new developments in construction and technique were affecting all new buildings, including churches. Perret's Church at Le Raincy showed how reinforced concrete could be used with success in church design. Many of the reinforced concrete churches built in this country are striking and convincing. These were generally rather unaccountably enclosed in conventional brick exteriors.

New churches were built in London suburbs, in Midland and Northern industrial areas, and in new housing estates. Occasionally the siting of the church was considered in the initial layout of the district, but often the church builders were faced with an awkward site, as well as an acute shortage of funds. The ideal solution (rarely attained) was to build church, hall and perhaps the vicarage in one group. In many cases the hall would be built first, and used as a temporary church. At other times the church was built in sections. Generally, the requirements of the Incorporated Church Building Society and the Advisory Committees guaranteed soundness of construction. There was no repetition of the phase of "cheap churches" of the early nineteenth century.

SOME TYPICAL CHURCHES

Among architects, Sir Charles Nicholson had perhaps been most faithful to Gothic tradition. His designs carried out the principles expressed in his writings, and are a true reflection of the typical Anglican attitude to church design. There are certainly strong arguments in favour of the theory that traditional services and ceremonies demand a traditional setting. If this theory is to be truly carried out, however, the correct setting for the services of the Book of Common Prayer is surely a Renaissance rather than a Medieval church.

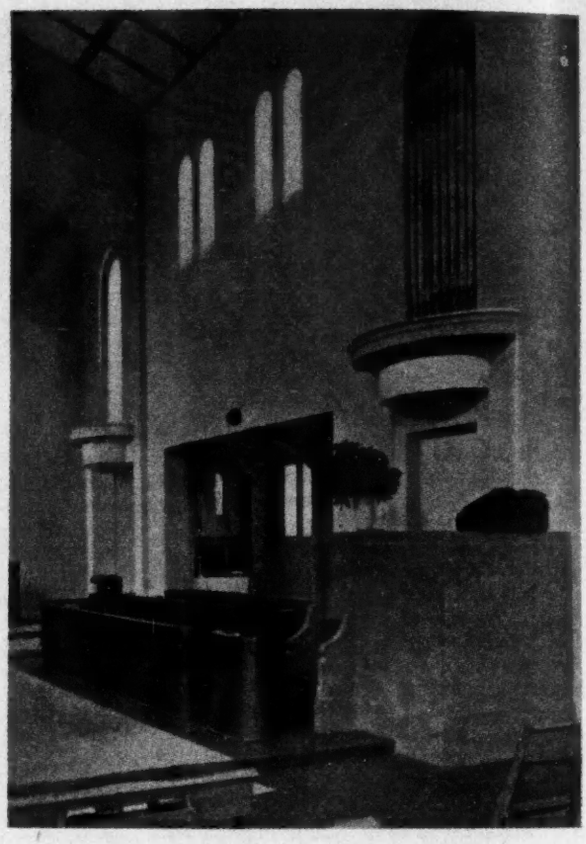


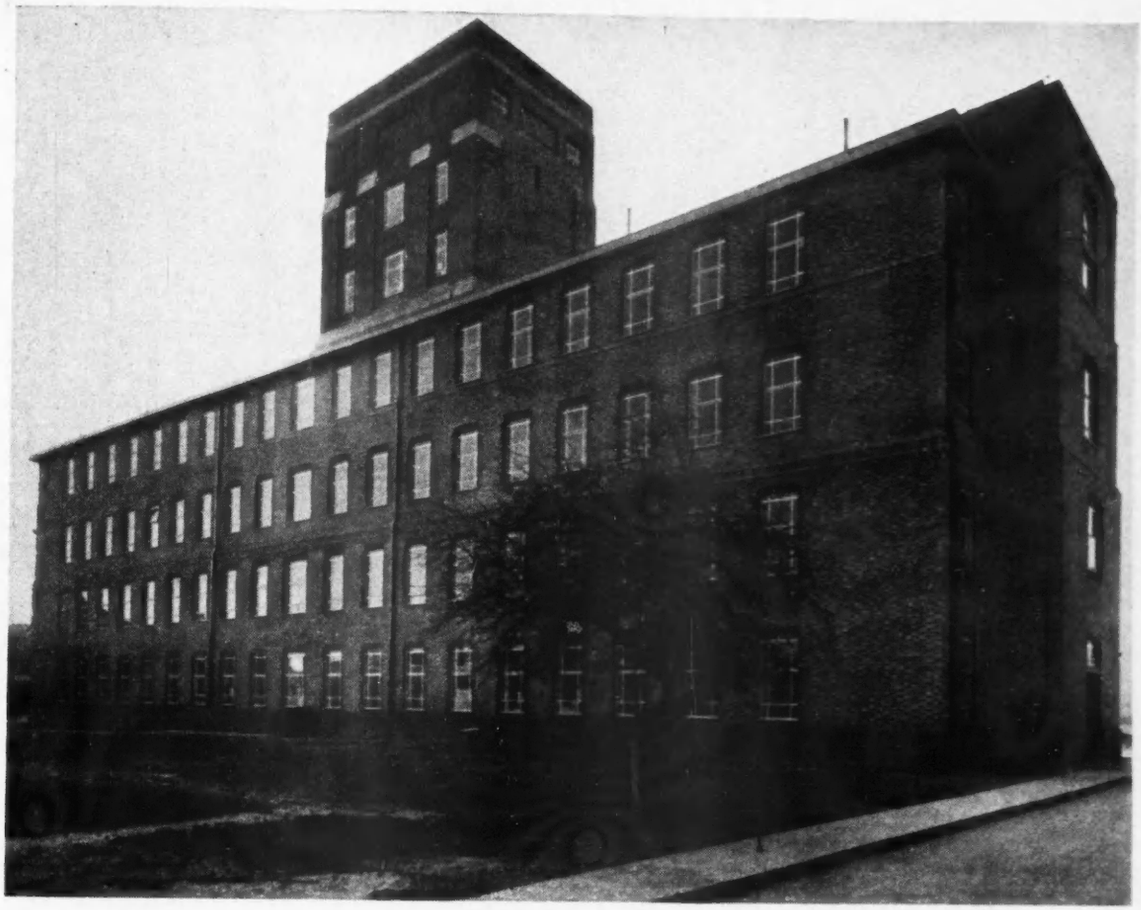
Fig. 2 Interior of St. Barnabas, Carlisle, by Seely and Paget.

Edward Maufe's churches, though Gothic in inspiration, are less orthodox in style. St. Thomas', Hanwell, (Fig. 1) is one of the more successful suburban churches. In plan, it has passage aisles of the type popularised by Bodley in St. Augustine, Pendlebury. The reredos at St. Thomas' is also reminiscent of Bodley.

Some striking reinforced concrete churches have been built by Seely and Paget (Fig. 2). St. Faith, Lee-on-the-Solent, is small, but has a distinct character. It seems a pity that the exterior of this church should be so conventional. The Church of the Ascension, Hanger Hill, is more original, though rather hard in its external appearance. Internally, it is more successful. The chancel is spacious, and well lighted with a low tower. The original handling of the chancel screen helps to give the east end of this church an unusual interest. The design of the altar is less successful.

Two churches, similar in style, the Good Shepherd, Carshalton, and the Holy Redeemer, Streatham Vale, were built by Martin Travers and T. F. Grant. The exotic blending of Gothic and Classical motifs in these churches is striking, but rather precious.

(To be concluded)

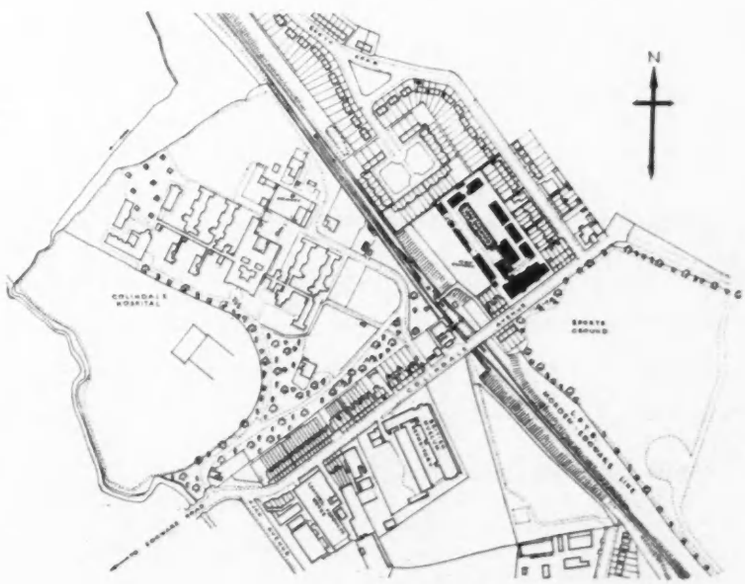


The north front.

NEW LABORATORY BUILDING, COLINDALE AVENUE, COLINDALE

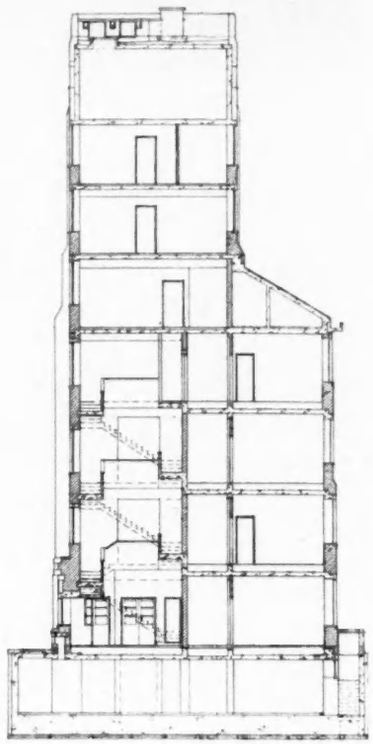
for the Central Public Health Laboratories

MAXWELL AYRTON AND PARTNERS, ARCHITECTS

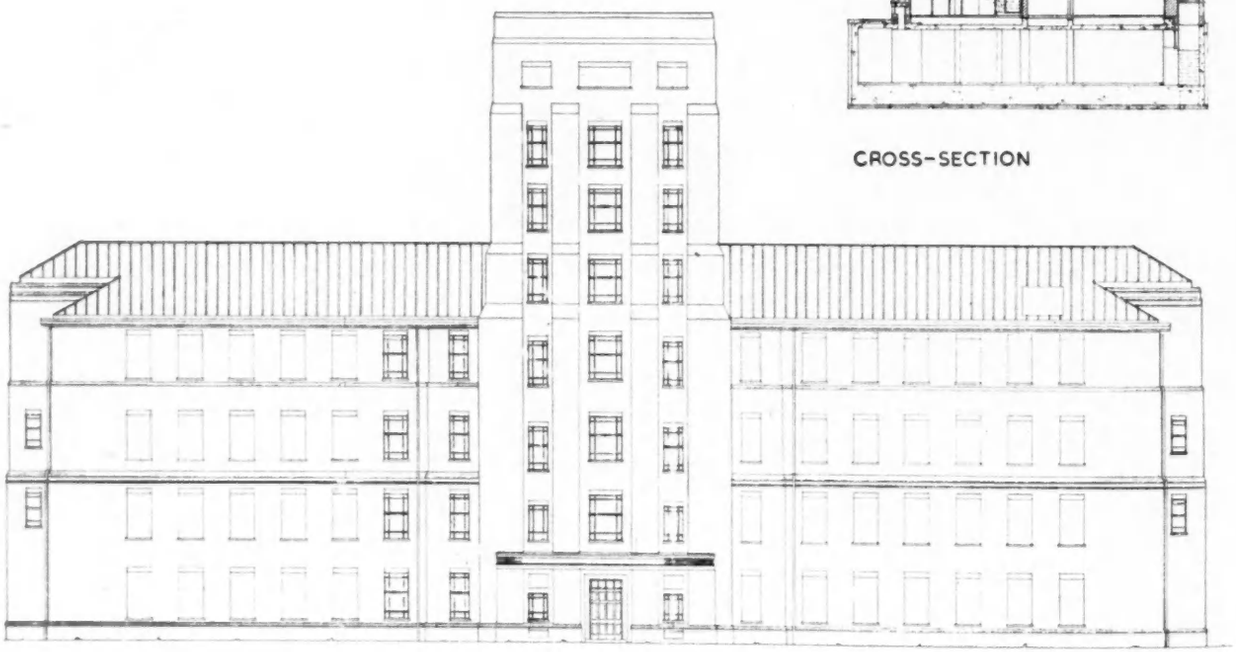


Site location plan.

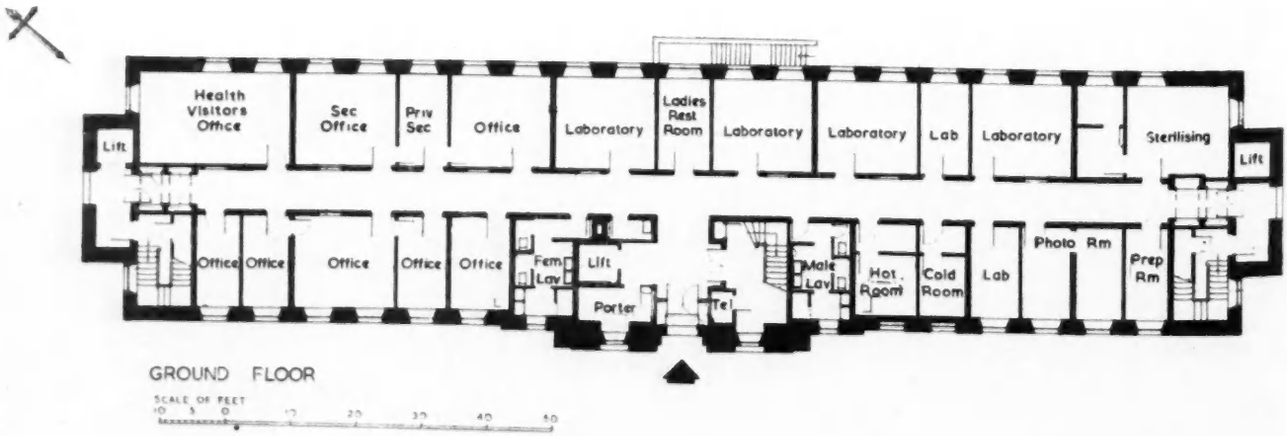
Typical corridor.



CROSS-SECTION



SOUTH-WEST ELEVATION



GROUND FLOOR

SCALE OF FEET
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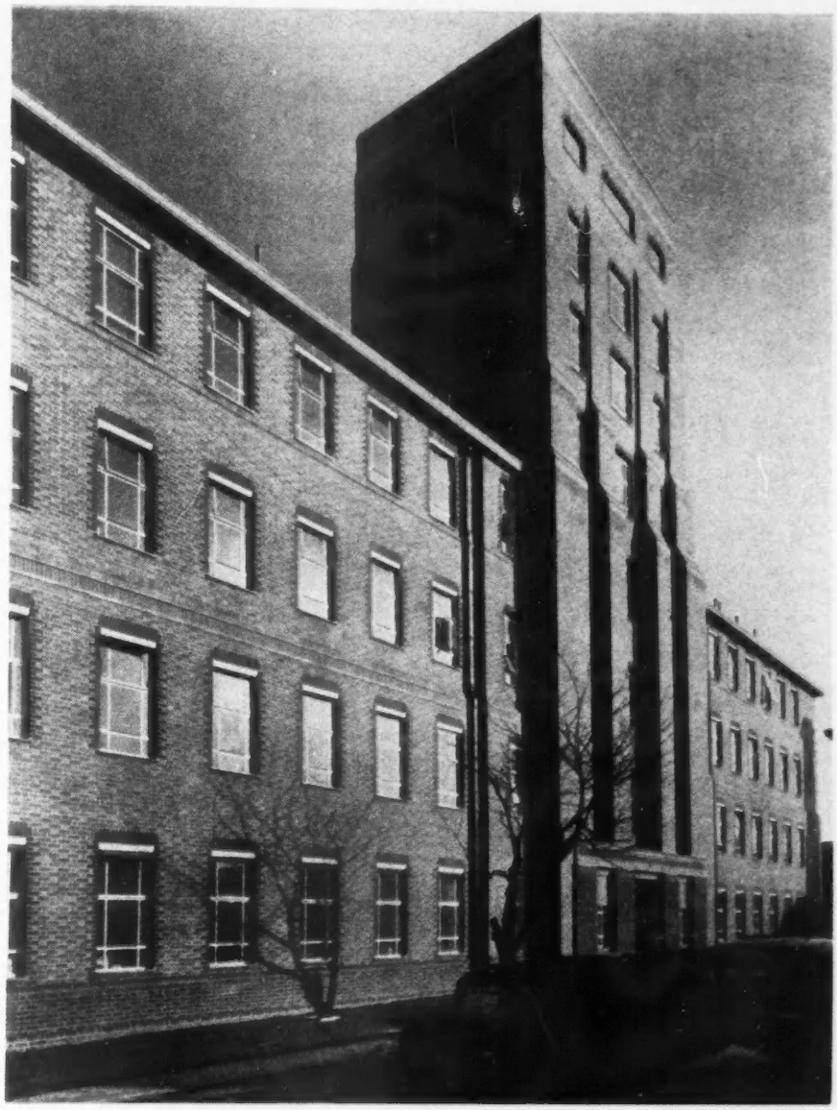
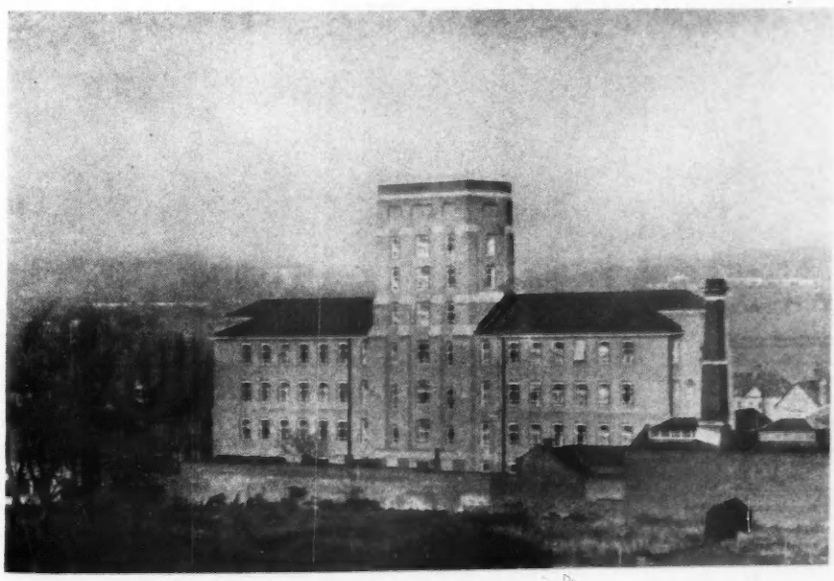


The main entrance front



General view.

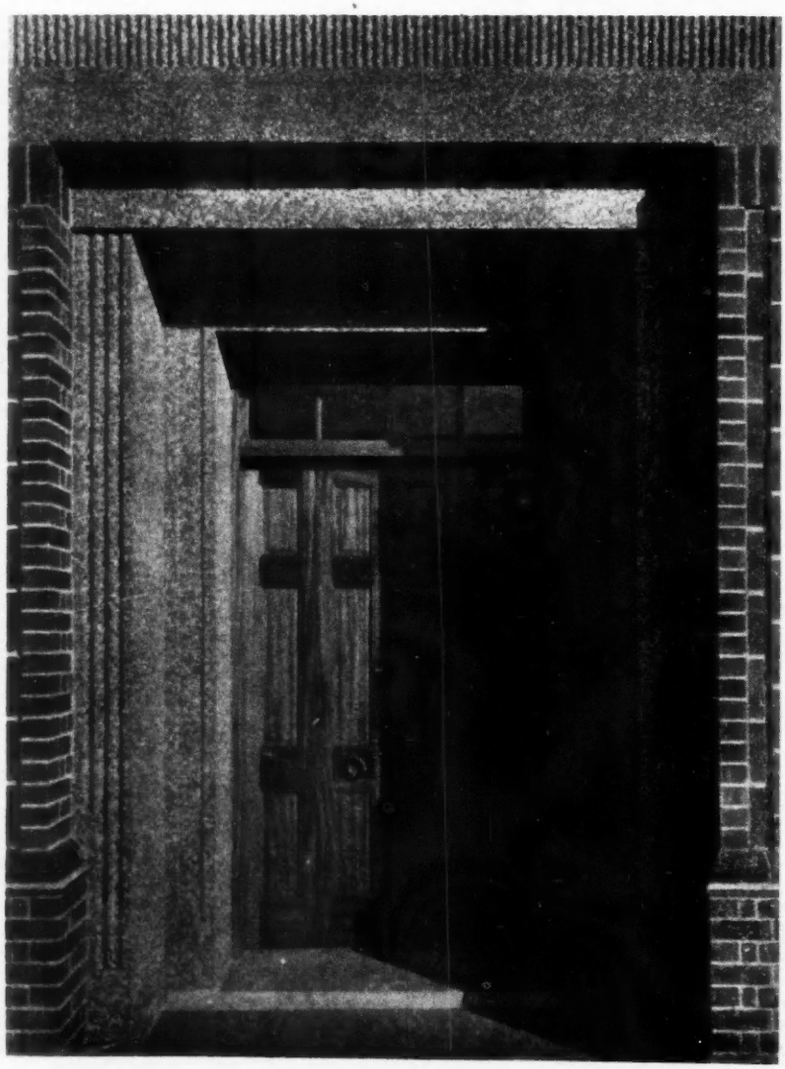
THE laboratories at Colindale, now illustrated, are directed by the Medical Research Council for the Ministry of Health and form the central technical establishment of the Public Health Laboratory Service. The work undertaken is essentially concerned with the diagnosis and control of infectious diseases throughout the country. The various departments and reference laboratories are staffed by specially experienced scientists who are working on problems, peculiar to their field, which are related either to the prevention or control of a particular outbreak of infectious disease or that disease in general. The Institute works in close collaboration with all the other laboratories of the public health laboratory service, public health departments and hospital bacteriologists of the National Health Service.

The new building consists of a four-floor block nearly 180 ft. in length, devoted to research laboratories, and there is a small basement, containing equipment for the mechanical services, and a four-floor tower providing office accommodation and water storage capacity. Construction commenced on June 19, 1950, and was completed on August 8, 1952. The structure contains many interesting features. Foundations generally are mass concrete strips, except for the basement portion which is rafted to support the tower, and has conventional tanked retaining walls of reinforced concrete. Floors are in reinforced concrete, supported on brick load-bearing external walls, and inside the building on a pair of brick load-bearing "spine" walls running parallel to form the central corridor.

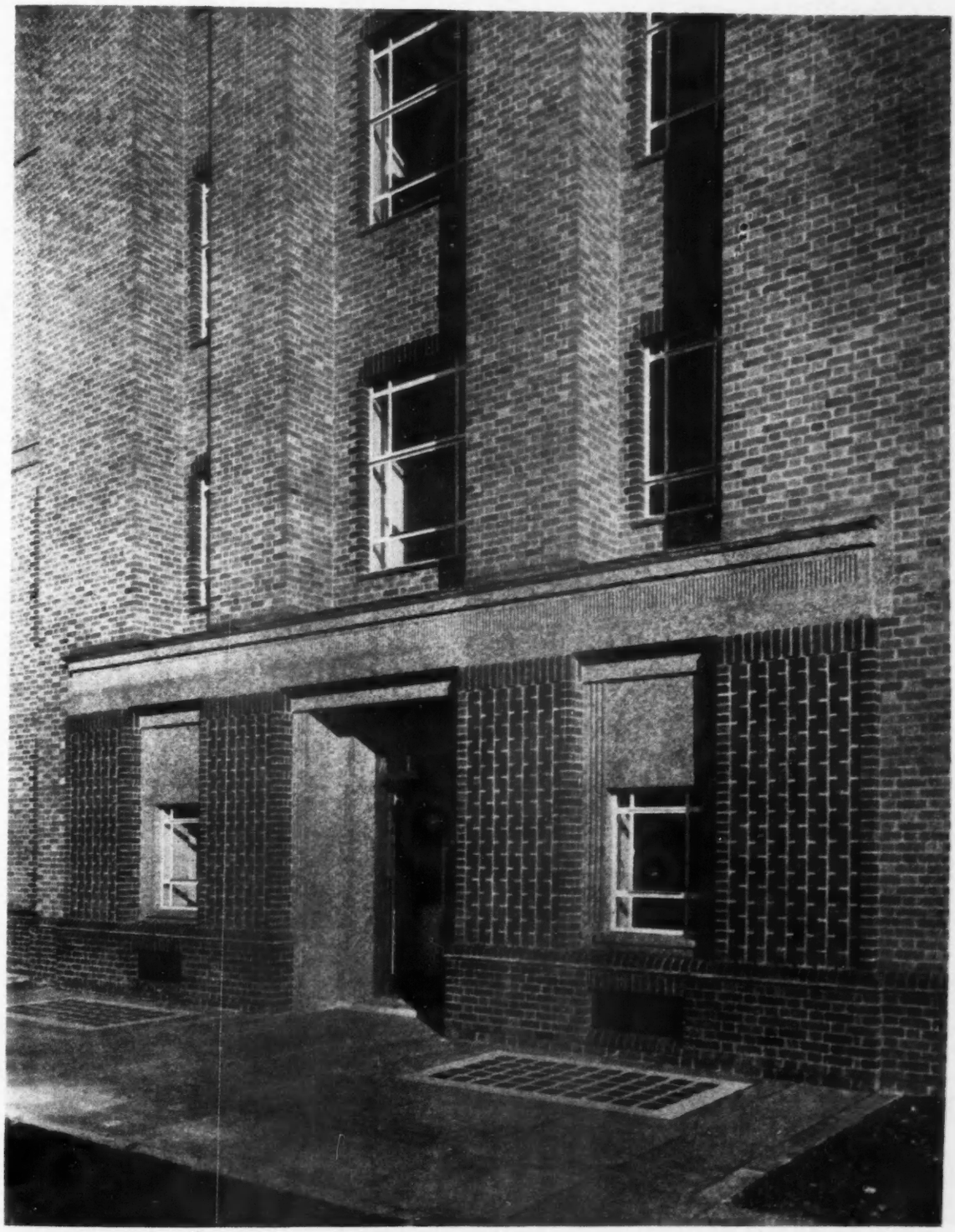
The main roof is an *in situ* reinforced concrete pitched slab supported on reinforced concrete purlin walls, insulated with wood-wool and covered with copper. The uninterrupted floor area thus provided within the roof space gives ample storage and accommodation for ventilation plant, etc. The tower occupying the central position is built on a ring beam of reinforced concrete at fifth-floor level. The tower does not extend over the full width of the building, and its rear face is supported on four slender reinforced concrete columns which rise from the basement within the thickness of one of the spine walls. The top storey of the tower contains two reinforced concrete water storage tanks of approximately 24,000 gals. total capacity, which not only supply the new building but also are connected to the surrounding buildings, thus providing a stabilised water pressure throughout the estate.

Heating is by means of the low-pressure panel heating system, and both this and the domestic hot-water systems are connected to the existing district heating scheme, the central boiler house of which is being re-equipped to cope with the increased demand. The structure is so designed that the internal layout partitions, benches, etc., can within reasonable limits be adapted in the future to the changing requirements of research.

A comprehensive programme of external works has



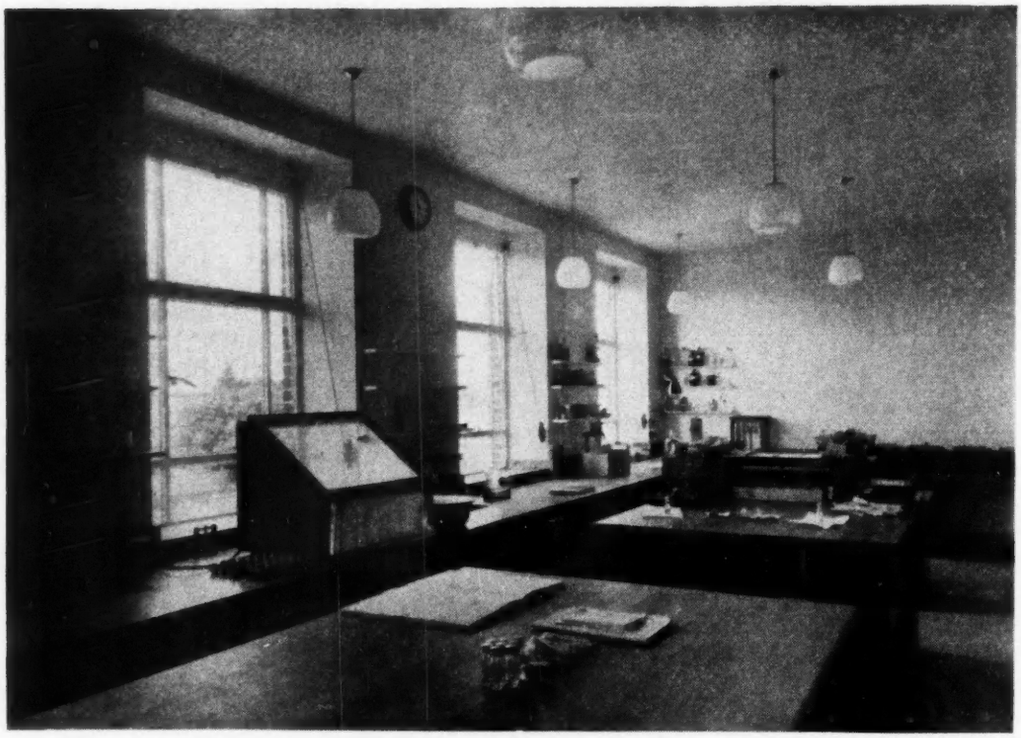
Detail of concrete surround to the main doorway.



Detail of main entrance, showing use of precast concrete blocks as dressings.

been undertaken with the formation of a new service road and modifications to the drainage and water supply systems of the estate. The external works also include the construction of a covered way linking the new building with the principal existing ones; these include a stable building, which has been converted into a library and lecture room seating approximately 100, and reinforced concrete tanks for the storage of fuel oil.

The buttress weatherings to the tower, the main eaves cornice and all dressings throughout are solid precast concrete blocks in sections similar in dimensions to stone dressings. These blocks are of $\frac{3}{4}$ in.-down gravel aggregate to proportion of $2 : 1\frac{1}{2} : 1$. The exposed surfaces are washed down upon removal from the mould to remove the cement fatty face before it has set, thus exposing the gravel aggregate which is varied in colour and gives a pleasing texture. Handling at works, carriage and in fixing requires care as no making good of damaged blocks can be

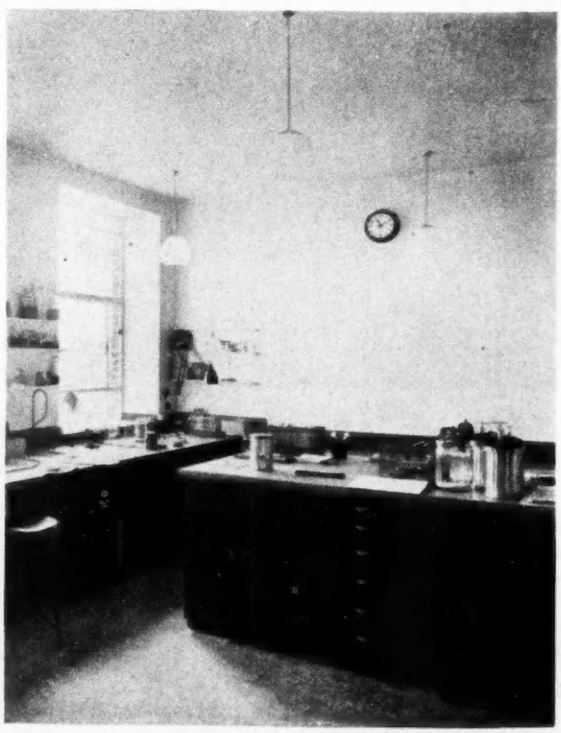


General view of a laboratory.

considered. The building was opened officially on January 15, by the Minister of Health, Mr. Iain Macleod, M.P.

The quantity surveyors were Messrs. A. R. Mais and Partners, and the general contractors Messrs. Trollope and Colls, Ltd., 41–44, Great Queen-street, W.C.2, who also were responsible for the foundations, reinforced concrete, the plumbing, the joinery and the Portland stone paving. The general foreman was Mr. F. Johnson. The constructional engineers were Messrs. Considère Constructions, Ltd.; Messrs. Rogers, Field and Bean were responsible for drainage and plumbing; and Mr. Vernon C. Hardy, M.A., M.I.H.V.E., for heating and ventilation.

Sub-contractors and suppliers were: Excavation, Higgins and London; dampcourses, "Aqualite," by Wm. Briggs and Sons, Ltd.; facing bricks, Highbroom Brick Tile Co., per R. Parton (Builders Merchants), Ltd.; artificial stone, Mono Concrete Co., West Drayton, Middlesex; copper roofing, F. Braby and Co., Ltd.; "Paropa" roofing, Frazzi, Ltd.; glass, James Clark and Eaton, Ltd.; "Granwood" flooring and stair nosings (Ferrodo inserts), Granwood Flooring Co., Riddings; "Colorphalte" flooring, Limmer and Trinidad Lake Asphalt Co., Ltd.; central heating, and gas installation hot and cold rooms, ventilating, Troughton and Young (Heating), Ltd.; gas fixtures and sanitary fittings, W. N. Froy and Sons, Ltd.; boilers, Davey Paxman and Co., Ltd., per Troughton and Young (Heating), Ltd.; electric wiring, bells, electric light fixtures, telephones and electric heating, Troughton and Young, Ltd.; plastering, J. B. Abbott and Co. (Plasterers), Ltd.; door furniture, Stedall and Co., Ltd.; casement and window furniture, Monk Metal Window Co., Ltd.; metal balustrades, metalwork, entrance gates and covered way, C. Hall (Metalworks), Ltd.; patent glazing, British Patent Glazing Co.; underbench furniture, Kerridge (Cambridge), Ltd., Cambridge; tiling, W. B. Simpson and Sons, Ltd.; slate benchtops, Goddard and Son; pavement lights, Lenscrete, Ltd.; waterproof rendering to water storage tanks, Quickset Water Sealers, Ltd.; "Vitrolite" shelving, Wottons (Croydon), Ltd.; and paint, Screeton (Paintmaker).

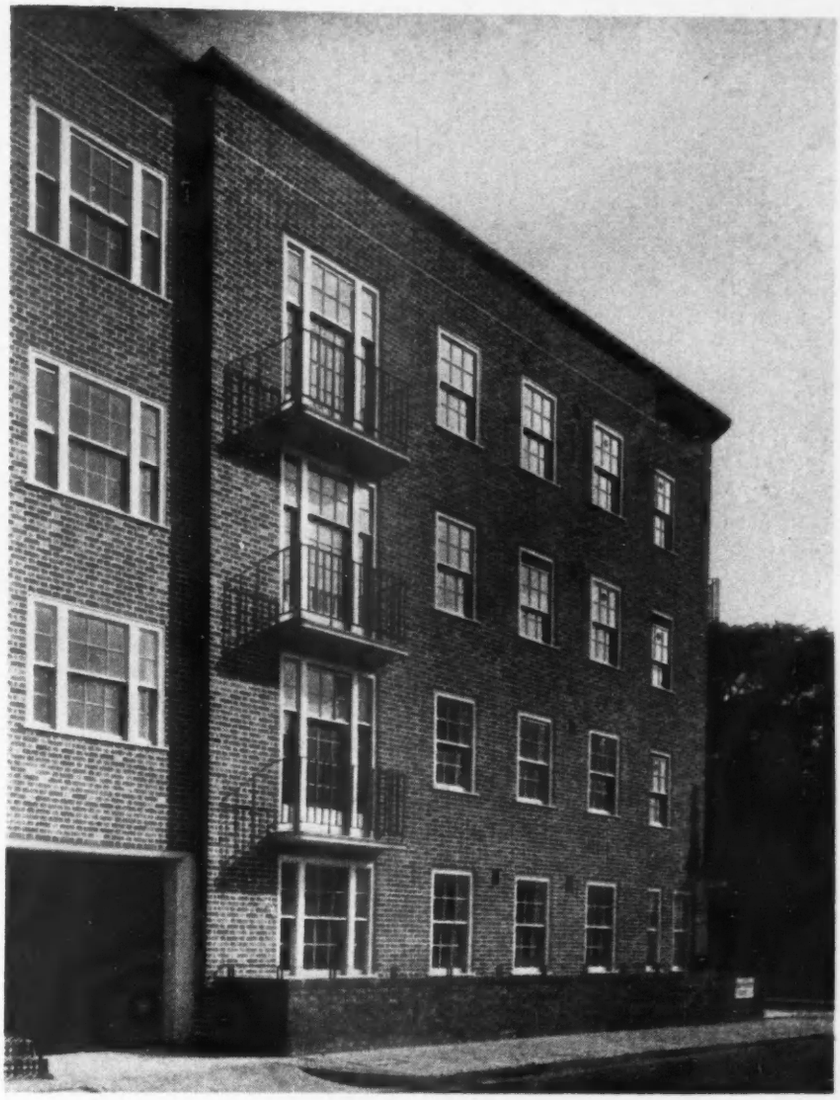


Another laboratory, showing underbench furniture.

LABORATORY BUILDING, COLINDALE

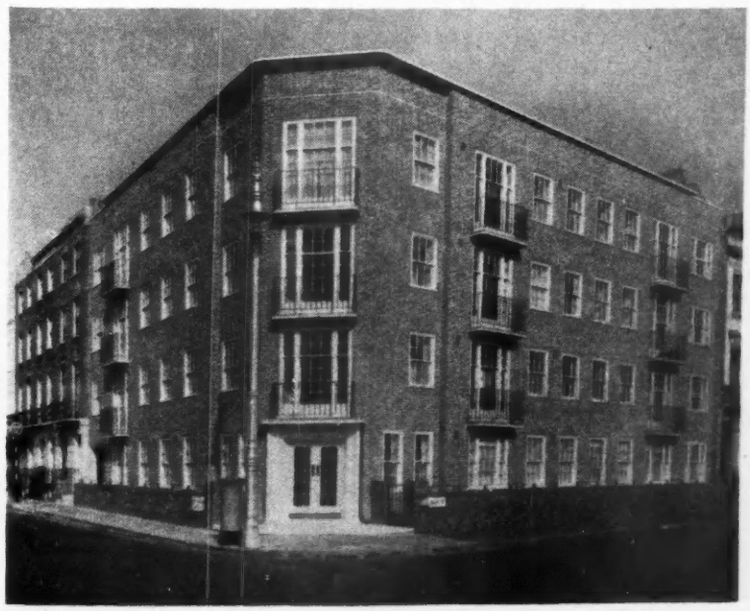
FLATS AT Nos. 142-148, EBURY STREET, S.W.1

D. E. HARRINGTON, FRIBA, ARCHITECT

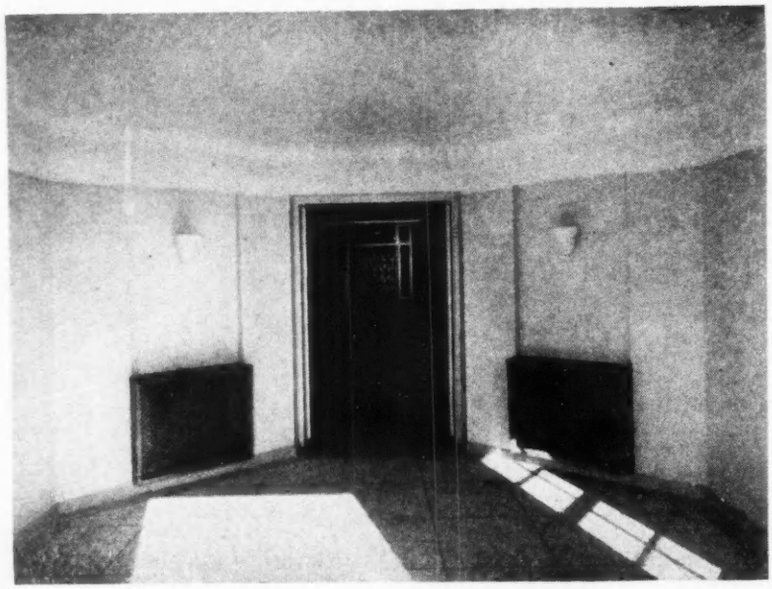


Right : Elevation to South Eaton-place.

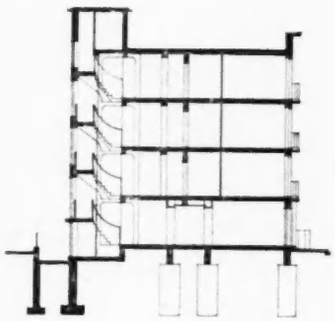
Below : General view of the block.



THIS scheme of middle-class flats comprises 15 self-contained units on four floors, there being seven two-room flats, four three-room flats and four four-room flats ; there is accommodation in the basement for tenants' stores and fuel, and the yard at the back of the block is available for tenants' car parking. The flats are approached by a corner entrance at the junction of Ebury-street and South Eaton-place, with the staircase and lift well planned on the axis of the two wings. The elevations have been designed on traditional lines to conform with the general character of the neighbourhood. Generally, facings are in a grey-brown, hand-made, sand-faced brick from a Tonbridge field. The structure is of load-bearing brick with brick cross walls and with patent reinforced concrete floor construction of the precast concrete hollow pot type. The foundations were constructed with mass concrete bases. The flat roofs are asphalted on an insulation mat composed of Vermiculite. Flooring to all flats is in ⅜ in. wood block laid on felt. Kitchen, bathroom



Left : Vestibule.



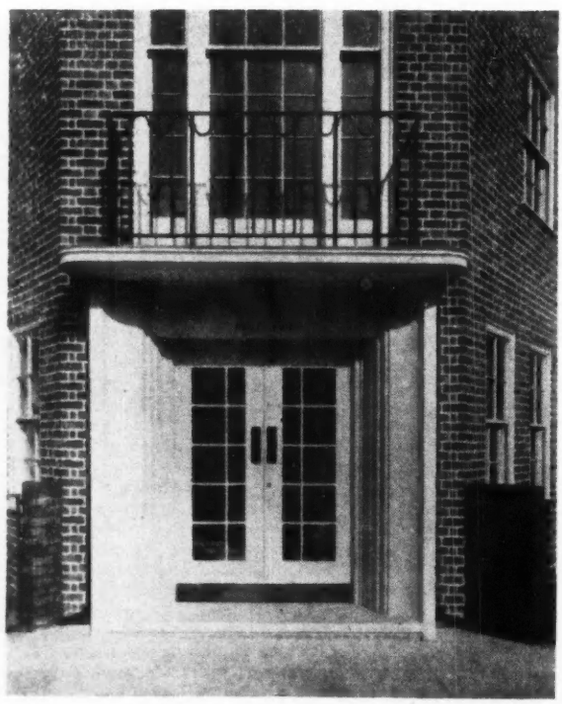
Cross section.

and toilets are in coloured Accotiles. Main staircase and entrance halls are in terrazzo. A central heating system supplies radiators to the entrance hall, staircase and to the internal halls in the flats.

The main contractors were Messrs. Gee, Walker and Slater, Ltd. Following is a list of sub-contractors :—

Reinforced concrete work, Flooring Contracts, Ltd. ; facing bricks, Sussex and Dorking Brick Co. ; lift, Keighley, Ltd. ; terrazzo, Arcanum; wood flooring, Vigers Brothers ; Accotiles, Marley ; heating installation and kitchen fitments, Gee, Walker and Slater, Ltd. ; wall tiling, Parkinson ; artificial stone, Empire Stone Co. ; fireplaces, B. Finch and Co. ; architectural ironwork, William Pickford, Ltd. ; metal windows at rear, W. James and Co. ; lift enclosure, Potter Rax Co. ; decorative surfaces, Cemglaze ; electrical work, Messrs. Price ; light fittings, Troughton and Young.

Typical upper-floor plan.



Detail of front entrance.

Ground-floor plan.

FLATS AT Nos. 142-148, *EBURY STREET, S.W.*1

View showing doors erected and work commenced on framework for a brick-built annexe, which will comprise a control tower and administrative offices.

ALUMINIUM FLIGHT HANGAR FOR THE COMET

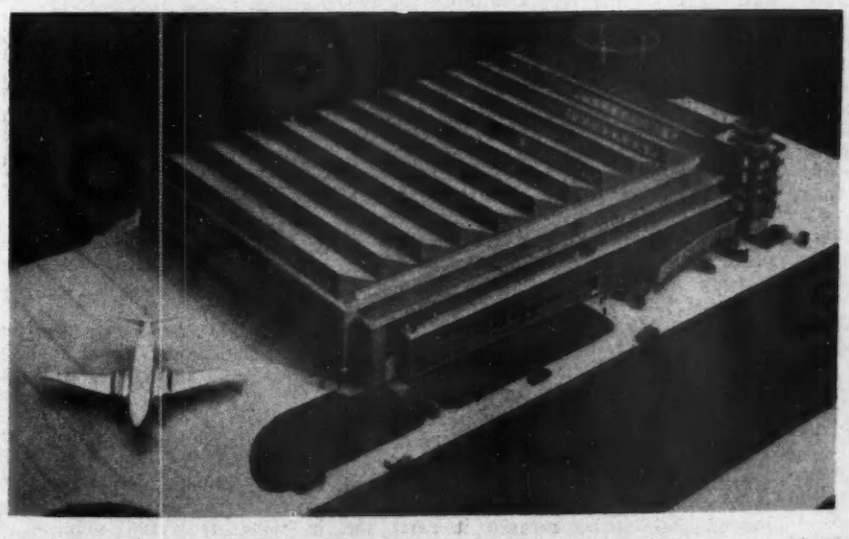
THE type of wide span aluminium structure first used in the Dome of Discovery on the South Bank, and subsequently in a three-bay hangar at London Airport, has now been used in the construction of a flight hangar for Comet jet airliners at De Havilland's airfield at Hatfield, Herts. Aluminium alloy was chosen for this structure because of the economic advantages which it offers in relation to other materials. The weight of the structure is only about one-seventh of that of an equivalent steel building.

The main structure consists of 12 portal frames at 30-ft. centres, spanning 217 ft. between pinned bases of welded steel, giving a clear span of 200 ft. between the inner legs. The legs of the portals are 8 ft. wide and the horizontal girder portions have a constant depth of 10 ft. throughout their span, excepting for a greater depth at knee positions to counteract the heavy fixing couples induced. The clear height to the underside of the booms under the severest loading conditions is 45 ft. 4¾ in. The roof is of north-light construction, with 11 valleys. The daylight requirements are fulfilled by incorporating 12 continuous runs of glazing 9 ft. 3 in. deep using aluminium alloy glazing bars and ¼ in. wired cast glass in 24-in. panes.

Architects for the hangar were Messrs. James M. Monro and Son, and the consulting engineer for the foundations was Mr. J. Bak, B.Sc., M.I.Struct.E. The Fulmer Research Institute acted as consultants on materials. The quantity surveyors were Messrs. A. L. Currie and Brown.

Main structural contractors were Structural and Mechanical Development Engineers, Ltd., Slough, and the following were sub-contractors :—

Erection, Carter-Horseley (Engineers), Ltd.; foundations, Gilbert Ash, Ltd.; aluminium structural sections, Southern Forge, Ltd., and T.I. Aluminium, Ltd.; corrugated aluminium sheeting, British Aluminium Co., Ltd.; doors, Esavian, Ltd.; roofing, William Briggs and Sons, Ltd.; insulation, Eastwoods Specialists, Ltd.; glazing, Helliwell and Co., Ltd.; apron flashings, Warwick Production Co., Ltd.



A scale model of the hanger as it will look when completed.

MODERN AMERICAN FACTORIES

Adaptability the Keynote of Design

THE aim of American factory designers to-day is to achieve the highest practicable degree of adaptability, with the consequence that a single type of building houses an increasing variety of industry, MR. W. A. ALLEN, B.Arch., A.R.I.B.A., of the Building Research Station, D.S.I.R., told the meeting of the Royal Institute of British Architects held at 66, Portland-place, W.1, on Tuesday. Mr. C. H. Aslin, F.R.I.B.A., County Architect, Hertfordshire, was in the chair. We take the following extracts from Mr. Allen's remarks:—

Americans have devoted a great deal of successful thought to industrial production and have established a structure of general ideas and a body of detailed knowledge which are now widely respected and studied. Hand-in-hand with this development, American designers have worked intensively on buildings for industry and have established a similarly firm structure of ideas and practices, but, for reasons which are none too clear, their factory developments seem little known outside their own country. At the Building Research Station we have taken an increasing interest in factory design problems, during the past three years, and I was glad to have an opportunity last summer to visit American factories and to spend some time with the principal designers there. I am equally glad to have this opportunity to acknowledge the generous way in which I was received and helped, and to pass on here some picture of the American viewpoint and practice.

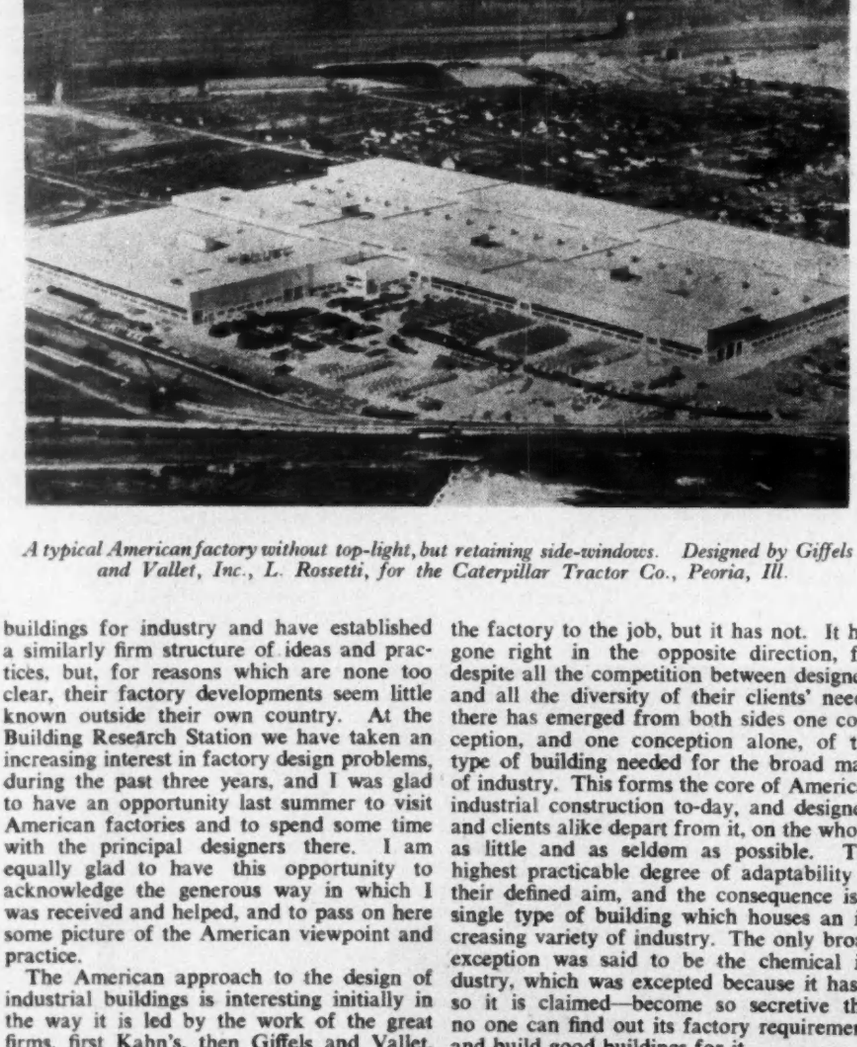
The American approach to the design of industrial buildings is interesting initially in the way it is led by the work of the great firms, first Kahn's, then Giffels and Vallet, and Austins of Cleveland, followed now by a growing group of similarly balanced but generally smaller organisations. The three I have mentioned have staffs ranging in size from about 400 to 850, and comprise—as one would expect—architects, engineers of all kinds, and in one case the design firm also is a contractor, and in another it does production engineering layout. They do not limit themselves to factories, but these are their special interest. It requires no stretch of credibility to believe that such organisations can acquire a very expert approach to a building type, especially when, as in this case, the building type is at the focus of a nation's interest. At the present time the three firms I mentioned are handling between them some £200,000,000 of work annually, the great bulk of it being factories.

A Single Conception

Now we come to what is, to me, the most interesting result of all this specialisation. One might reasonably have expected that it would lead to closer and closer tailoring of the factory to the job, but it has not. It has gone right in the opposite direction, for despite all the competition between designers and all the diversity of their clients' needs, there has emerged from both sides one conception, and one conception alone, of the type of building needed for the broad mass of industry. This forms the core of American industrial construction to-day, and designers and clients alike depart from it, on the whole, as little and as seldom as possible. The highest practicable degree of adaptability is their defined aim, and the consequence is a single type of building which houses an increasing variety of industry. The only broad exception was said to be the chemical industry, which was excepted because it has—so it is claimed—become so secretive that no one can find out its factory requirements and build good buildings for it.

At first impression this may perhaps seem to some the antithesis of logic, economy and functionalism (to use a now unstylish phrase). But the explanation is simple and seems convincing; adaptability, they say, is in the national interest because it eases the transition from war to peace production and *vice versa*, thus increasing national strength; and it makes for a better private investment because an adaptable factory will give good working conditions for a long time into the future, or be a more saleable article if a sale is desired. It is not difficult to believe this reasoning to be sound, especially if we cast our minds back to the strains we underwent in our own factories in the early years of the recent war.

And now, with these preliminaries out of the way, and the idea of a basic type of building in our minds, let us take a closer look at the structures themselves.



A typical American factory without top-light, but retaining side-windows. Designed by Giffels and Vallet, Inc., L. Rossetti, for the Caterpillar Tractor Co., Peoria, Ill.

The Buildings Themselves

The chief elements in adaptability as practised at present are adequate height, adequate bay size, a roof system capable of taking reasonable hung loads at any point, a clean floor plan, facilities for good artificial ventilation, often up to full conditioning, and a high uniform level of artificial light. It will perhaps be best if I say something about each of these in turn, and try thus to build up a picture of the factory type as a whole.

The clear height usual below trusses to-day is 18 ft. This figure is an increase on immediate post-war practice, and further increases appear to be likely, partly to be able to accommodate light travelling cranes, partly for increasing machinery heights, and partly to make the building more suitable for warehousing, if that becomes necessary. I was told at one large firm that their new buildings are all going up to 30 ft. in the clear for these reasons, with 40 ft. as the figure where warehousing is definitely expected.

The plan is usually laid out on a 10-ft. grid, with a bay size of 40 by 60 ft. extending to 40 by 80 ft. or 40 by 100 ft.; I doubt if there will be much pressure to go beyond this size for ordinary purposes. They use flat steel trusses, about 6 to 8 ft. deep, and an extremely interesting development—a straw in the wind—is the laying in of stocks of these standard trusses by steel fabricators, so that they can be taken "off the peg" as it were. This saves a great deal of time and trouble for everyone, and is one of the factors that make possible their common constructional times of four to five months for factories.

The trusses are classified according to the hung loads they are designed to take, which are generally over a range of from one to three tons per panel point, or three times this amount per bay. Figures of six to ten tons at each of three points in a truss were mentioned as representing some recent factories.

Adequate bay size, adequate height and adequate facilities for hung loads are factors in the efficient use of space in a factory. One often wants very high machine population densities, and these may only be practicable if there is considerable freedom to hang loads and little interference from columns. Some very interesting comparisons between the efficiency of old and new space were quoted to me, one example of which was a firm moving into an area of three-quarters of its former size and able yet to expand production by 50 per cent.

I think it is the case that they use one size of stanchion as far as possible—an "H" section, not an "I"—but I did not fully establish the point. It is the case, however, that there is considerable electrical control gear available and made explicitly to fit the recess down the side of one particular size of "H" column. It is enviably neat, and clearly represents a degree of standardisation in stanchion sizing sufficient for a good market to be anticipated.

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Methods of Cladding

While we are discussing the frame I will just sketch in the common cladding system. Walls, up to cill height, are usually of brick, or hollow tile with a buff glaze. The hollow tile gives an excellent appearance and is quickly laid. Above the windows external sheeting is usually asbestos, but aluminium is also used now. Internal sheeting is usual, using flat asbestos, and an inch of common thermal insulation is inserted in the cavity. Walls consisting of large precast concrete panels are now being used experimentally by Kahn's and are said to be promising.

The roof consists usually either of sheet steel units or concrete panels. The steel units are of simple strip, 10 or 20 ft. long, and turned down at the edges to form a sort of welt. These are spot-welded to the trusses *in situ*. The concrete tiles are 1 in. thick, turned down about 4 in. at the edges, 2 ft. wide, and spanning between truss centre lines.

In both cases an inch or so of common insulation is laid over the top, and a felt waterproofing laid down. The concrete tiles are popular because with them it is so easy to form a hole in the roof for local modifications, as for instance for supplementary ventilation for heat treatment and other hot processes. Adaptability once again.

Total steel weights of 12 to 16 lb./sq. ft. were quoted for light to medium-heavy manufacture. They feel this represents conservative practice, but they are waiting for research to show the way to reductions. Professor J. F. Baker's work at Cambridge is perhaps what they are waiting for.

Small "H" sections are now used for trusses to give neatness, and welding is customary.

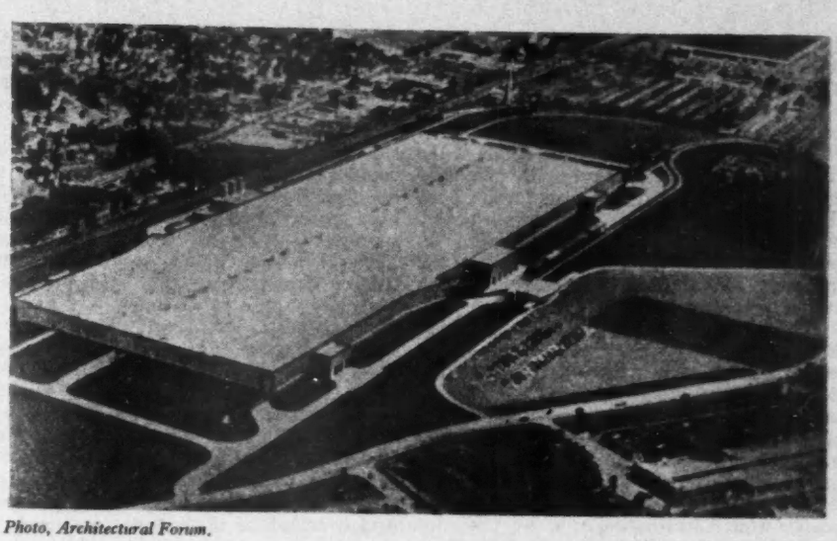
Now that we have a picture of the structural system, we ought to look at the planning. Single-storey work is the rule now, on the grounds that horizontal transport has been more highly and economically developed than vertical. The chief elements in the plan are much the same as they are here—an office block (usually two storeys), the toilets and locker rooms, the transformer cages, the restaurant, the main plant and the boiler house. The location of the locker rooms and toilets and restaurant is an interesting problem, and the course that seems most likely to survive is to put toilets, lockers and transformers and often the restaurant on mezzanines. This leaves the owner his floor space clear, and is a reasonable compromise in other respects.

Entrance Design

As I visited successive factories I became increasingly aware that entrance lobbies were given a lot of attention and that they shared certain characteristics. They were much of a size, about 25 or 30 ft. square and 15 to 20 ft. high. They had good, and often magnificent floors, good modern carpets and furniture, attractive indoor planting and splendid curtains. At a strategic point there would be an efficient-looking control desk with an efficient and very presentable receptionist in control.

In my innocence I presumed all this was to impress the visitor, and no doubt this is often the main intention; but it is not always so. Apparently the men cannot cross a well-designed room of this size, especially over a fine floor, and pass the receptionist as well, without feeling that dirty shoes, dirty clothing and bad behaviour generally are out of place. This has its effect on them inside the factory itself, and there is evidence from some firms that it has a good effect on conditions at home as well.

And now, back to adaptability, and to their highly interesting and controversial approach to lighting.



Photo, Architectural Forum.

A recent windowless plant, by Austins of Cleveland, for the Lincoln Electric Co. of Cleveland. A two-storey office block is in the centre of the factory site.

Natural Lighting in Decline

Natural lighting from the roof is attempted less and less. The history of its decline runs somewhat as follows. North lighting was abandoned 25 or 30 years ago because it was difficult to ventilate and the directionality of the lighting created serious working difficulties, as we, too, sometimes find. They went over to the monitor, which reduced the directional effect but gave uneven and inefficient lighting the way they did it. Then wartime experience of black-out factories without roof lighting showed that the artificial lighting was acceptable by itself, and that if the money saved on capital and maintenance costs of monitors (some 10 per cent. of total factory costs) were put into good artificial ventilation, the net result was much better working conditions. Now the benefits of good artificial ventilation are so convincing, and the difficulties of natural ventilation are so great with high and wide factories that the use of monitors for this purpose has become difficult to defend.

This in turn means that there will be so much overhead ducting that appreciable obstruction will be caused by daylighting if it is attempted from roof glass. Since further obstruction is caused by the mass of fluorescent fittings, by the toilets and locker rooms and transformer cages, and by the steelwork, roof glass as a source of daylight readily loses a lot of its potential values. Its defence is attempted on grounds of psychological benefit or of fuel saving.

All this is not the same as the case for the completely windowless plant, which is defended by some but by no means all designers and clients. Americans have experimented, as we have, with window walls and vision-strip fenestration. The former has, of course, failed; it admitted so much solar heat and caused so much glare that it gave rise to the production of special blue anti-sun glass, but this was so expensive and opaque that it was pointless to go on with the window wall. On the other hand, the vision strip, about 6 ft. from cill to lintol, can have what are loosely called psychological effects of relief even in the middle of a factory 500 ft. square, and I believe this to be the policy that will survive and become standard.

Quality of Artificial Lighting

It was surprising to find, with this tendency to rely on artificial light, that the quality of artificial lighting was poor. Its quantity, at uniform levels of 35 ft. candles or so, was very satisfying, of course, but not once did I see in a working area any direct light allowed to reach the ceiling, though an upward proportion of one-tenth to one-quarter has been a common recommendation both here and in America in recent years.

Fluorescent lighting is in twin-tube fittings in substantially continuous rows at 10 ft. intervals. A search for cheap suspension is on, and the cheapest I heard about was the use of ¾-in. steel cable tightly stretched across the bottom chords of the trusses; these cables were termed "messengers," and could receive fittings direct without noticeable sag. The cheapest wiring was said to be done inside a cavity along the crown of the fitting. A life of up to 7,000 hours was said to be regularly obtained with some modern lamps.

Filament lighting seemed rare, except for deep-drawn internally silvered lamps, which were used to punch light down where there was a high population density of machinery.

High-powered mercury vapour lamps with supplementary filament lighting were common in high bays. The glare was shocking. The unpleasant colour was relieved by the filament lights which, fortunately, are rendered necessary by the fact that these mercury vapour lamps take a long time to return to full-light if turned off. The really interesting thing to see was the uniform and relatively strong illumination which is taking the place of the various levels of illumination related to the visual difficulty of the task.

If the poor quality of the artificial lighting was a surprise in factories with an artificial climate, an even greater surprise was the almost total absence of colour. Two tones of grey-green with occasional touches of cream were thought to be fairly described as "colour in industry." In this respect the good British factory seems to be a long way ahead of its American counterpart.

Ventilation Problems

Artificial ventilation is, of course, the established practice. Common practice is to design for four to seven summer air changes, or about 2 cfm/sq. ft., and to reduce this to about one to one and a half air changes per hour in winter, with re-circulation of up to

75 per cent. of the total air, thus utilising the remainder of the capacity of the fans. The air may be brought in through the side of the factory and the push applied there, or through the roof, with the plant in a monitor or penthouse, or in the depth of the trusses. The outlets are usually arranged at one per bay, usually at truss level. Then there will be power extractors located between the inlets, and suitably powered to leave the building slightly pressurised by the incoming air, after allowing for extraction at special pressures.

Distribution has been given much thought because it has been found, as one would expect, that if men have no natural ventilation in summer, there must be a real swirl of air to produce an acceptable alternative condition. In winter, however, uniformity must be provided. So the anemostats or outlets are tending to be designed for a hard downward squirt in summer, and a wider, gentler winter distribution.

Since they have the artificial ventilation plant, heating is naturally done by warming the circulated air; no radiant heating was seen. Cooling is said to be becoming common, but humidifying and filtering are still unusual, though filtering is perhaps fairly widely accepted.

The most ingenious and the most seemingly sensible plant I heard of was a standardised set of units, assembled in pairs on platforms which were then hoisted to the roof and coupled to the ducts. Each set had space for five components: fan, heater, cooler, filter and humidifier, the unnecessary components being omitted and replaced by spacers until wanted by some change of manufacture. All big doors, and the periphery of the factory, are commonly protected by supplementary warmers. Most of the big factories seem to provide supplementary power to their fans to run at half-speed (which requires ⅛th power) in the case of air attack.

I have said nothing about power, and could not attempt a detailed record. It was obvious, however, that no fixed view had been reached as between overhead and floor supply to machines, though the primary cable is always below ground to reduce risk of damage from fire. On the whole, overhead supply to machines was preferred for flexibility, fed from sub-stations designed to supply areas of 200-300 ft. square. Floor distribution is only attempted if wood-block floors are available to facilitate changes (which are constantly going on in American factories); but wood-block floors are more expensive and dirty than concrete, and are by no means customary despite their softness and kindness to dropped tools. And even where these floors are used, the overhead bus duct with its advantage of flexibility, is liked. It adds to the complexity of the scene, unfortunately, by its forest of feeds, but its greater flexibility keeps it ahead of floor distribution.

The only other point of detail I want to record is the almost-standard use of sprinklers, which take the place of all other fire precautions.

The Norm of Design

This completes my picture of what is, so far as I can judge, the norm of American factory design. It is, no doubt, subject to considerable variation in practice, but this is no cause for surprise; it does not pay to make a thing of this kind so adaptable that it covers every conceivable need. The surprising thing is that in practice the departures are so small and so few, for there is no doubt that this norm comprises the bulk of work done by the big designers, and that they can use it everywhere almost from the arctic circle to the equator.

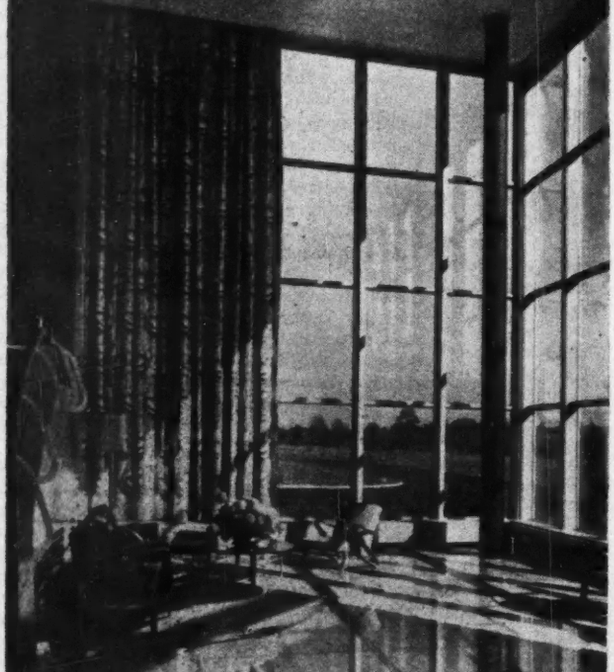


Photo by Gottscho-Schleisner, Jamaica, New York

Works entrance to Johnson and Johnson's factory, Metuchen, N.J. Entrances of this type are found to act as an incentive to cleanliness on the part of the workers. Architects, Fellheimer and Wagner.

Perhaps another surprising thing, when one thinks about it, is that this form of building, now explicitly the main standby of the industry of probably the most productive nation on earth, is—so far as I know—not yet represented by a single, fully representative specimen in this country, or at most by one or two; this, to me, is so interesting that I would like to take a few minutes to consider what lessons for us there may be in the American work.

First of all, I do not think we should have any doubt about aiming for adaptability; our inheritance of low-grade working conditions, and the strains to which they were subjected by black-outs in the recent war, seems to me to be evidence entirely on the side of this principle.

Harder questions arise if we consider particular ways of providing adaptability, but I offer the following line of thought for consideration.

First there is this question of natural lighting. We have been accustomed to attach a lot of importance to it, but how important is it? We operate multi-storey factories without top light; we operate vast numbers of factories with glass so dirty that it hardly counts as glass; and we have large numbers of people working in department stores where there is no daylight at all. I think we may sometimes over-value it for some purposes therefore. I am distinguishing between top-light for illumination and side windows for a view, of course; I think the case for the latter is very strong, and I am not going to question it.

On the question of cheapness, I do not know how to add up the score yet. Daylight saves some electricity, but in modern industry, visual requirements are so exacting that daylight is often inadequate, so it does not do away with the need for artificial light. In any case, electricity economy is offset to some extent, and perhaps substantially, by the additional heating and sometimes cooling loads, resulting from roof glazing. Capital costs are not much affected, for you cannot economise in artificial lighting plant merely because you have daylight part of the time. I rather suspect that in this country the economic argument might come down slightly on the side of daylighting, but I would not be sure.

Wartime Requirements

Then, too, I think one must keep an eye on wartime conditions. This is when factories must operate at highest efficiency, and unless peace-time conditions are geared to an easy black-out, then the tendency is for wartime working conditions to deteriorate.

I am suspicious, too, about the amount of obstruction which occurs often due merely to steelwork, walkways, over-head gear and high machinery. I have seen roof lighting reduced to a token only by such things, and then I am sure it is not worth its cost, at least for illumination.

Ventilation, of course, plays a part in the argument. Natural ventilation is adequate for quite a considerable proportion of industry, but rising demands of dimensional exactness and cleanliness are steadily increasing the need for artificial ventilation. It seems to me that when a case for artificial ventilation is made out, the case for natural roof lighting tends to diminish appreciably, for the ventilation plant also can do much obstruction, and then the glazing adds to both the heating and cooling loads.

As a last word on this particular point, let me say that if and when roof daylighting is used, it should at least be designed in relation to indoor cleaning gear which makes possible frequent cleaning. Gibberd's built-in trolleys at Appleby-Frodingham's are a good answer, and I do not really think glass that cannot be cleaned frequently is worth very much to anybody. Once every month or two is the sort of thing I mean.

To the Americans, adaptability (and economy) practically rules out reinforced concrete, and especially the shell forms of this construction. There are substantial difficulties we all know about for daylighting with these forms and for ventilation, but the key thing to the American designer or client is the lack of facilities for hung loads, and the intractability of the system when you want to cut holes in the roof for ventilation, and other modifications.

Cost is something that is so difficult to discuss in general terms that I have avoided it on the whole, but there is one point I think should be mentioned. We are often told that economy is essential, and designs are sometimes stripped to the bone. Is this desirable? As far as I can see from the figures available to us the average factory represents, in capital costs, something like 3 to 5 per cent. of total production costs, and American figures are only slightly higher. If this is the case, it seems very easy to urge economy unwisely, for the difference between bare necessities and good working conditions are then so small a proportion of costs that they could scarcely fail to be recovered in increased productivity. The important point, of course, is to know what improvements can influence productivity.

May I ask you finally to consider what new direction, if any, we should now take? My own feeling runs somewhat thus: that we should press for the standardisation and stocking of clean, economic, adaptable and attractive steelwork; that we should ask for adaptable ventilation plant along the American lines I described, co-ordinated with the steelwork. No doubt we should have monitors available to us when needed. And we should standardise in a way that facilitates the supply and fixing of good standardised lighting and power gear. I should like to see an effort made to devise reinforced concrete designs to give adaptability, for they can have the merits of cleaner design and lowered maintenance costs. And then I think we should aim to increase in every way studies of industrial technology, because a sound policy of industrial building design can be one of our best contributions to national productive efficiency.

ARCHITECT FINED £100

Licence for Conversion Exceeded

A Worcester architect who under-estimated the cost of converting an old stable into a bungalow was fined £100 at the Worcestershire Quarter Sessions on January 14. He was Mr. Frederick E. S. Storer, A.R.I.B.A., aged 38, of Foregate-street.

He pleaded "guilty" to contravening the Defence Regulations by exceeding his licence while carrying out the conversion in 1951. He was given three months to pay.

Mr. John Frankenburg, prosecuting, said Storer had undertaken to convert Bevere House, near Worcester, into flats for a Mr. Lucy. While work was going on he suggested that the stables be converted into a bungalow. He obtained a licence for £720 for the work. When it was found the original walls and part of the roof needed replacing he gave orders for the work to be done. He said he was getting a supplementary licence.

"In fact, no such licence was obtained and by the time the builder sent in his bill, the original licence had been exceeded by £1,140," said Mr. Frankenburg.

Mr. Paul Layton, defending, said although Storer was now living in the building, he got no personal benefit from his actions. When the plans for the work were made the bungalow was intended for a gardener.

"When the final amounts were worked out it was found that a much larger sum was involved," continued Mr. Layton. "The builder, who has had many years' experience, said Storer's first estimate of £720 could, with luck, have covered the work. It was only when operations began that it was found that the woodwork and some of the brickwork was rotten."

R.I.B.A.

Notes from Council Minutes

THE following notes are taken from the minutes of the R.I.B.A. Council meeting held on January 6:—

The Honorary Fellowship: The Duke of Norfolk and the Earl of Scarbrough have accepted the Council's nomination for election as Honorary Fellows.

Appointments: *Darlington College of Further Education*: *R.I.B.A. Representative on Board of Governors*: T. V. Deas (A).

Conference on Tropical Architecture, University College, London, Easter, 1953: *R.I.B.A. Representative on Organising Committee*: Alister MacDonald (F).

Royal Sanitary Institute Health Congress, Hastings, 1953: *R.I.B.A. Delegate*: H. Edgar Bunce (F).

R.I.B.A. Representatives on B.S.I. Committees: Non-ferrous Metals, C. Sykes (F); Plastics, H. E. D. Adamson (A); Iron and Steel, D. W. Aldred (F); Certification Marking Committee, F. H. Heaven (A); Committee on Statistical Methods, D. W. Aldred (F); Units, Symbols and Technical Data, E. L. Bird (A).

Ministry of Housing and Local Government Housing Medals, 1953: The Minister of Housing and Local Government has again requested the R.I.B.A. to appoint Chairmen of Regional Awards Committees, the architect members of the London Awards Committee, and to arrange through the Allied Societies for the appointment of architect members of the Regional Awards Committees.

It was agreed to make the following appointments as chairmen of regional committees: Northern, T. J. Cahill (F); East and West Ridings, R. A. H. Livett (A); North Midland, Professor Stephen Welsh (F); Eastern, Peter B. Dunham (F); South Western, Lt.-Col. Eric Cole (F); Wales, Dr. T. Alwyn Lloyd (F); Midland, A. G. Sheppard Fidler (F); North Western, W. Cecil Young (F); South Eastern, C. E. Culpin (F). Architect members of London Awards Committee: J. F. Howes (F), Miss Judith Ledeboer (A), and Peter Shepheard (A).

It was also agreed to ask Allied Societies to nominate representatives on the same basis as in previous years.

BUILDING RESEARCH

Cement-Aggregate Interaction

A FURTHER National Building Studies Research Paper, entitled "Reactions Between Aggregates and Cement: Part II—Alkali-Aggregate Interaction: British Portland Cements and British Aggregates," has been published by the Stationery Office for D.S.I.R., price 1s.

This paper (No. 15) is the second of a series dealing with chemical reactions between aggregates and cement. Serious breakdowns in concrete structures were first attributed to this cause more than 10 years ago in America, and since then similar failures have been recorded in many parts of the world. Although no failures caused by cement-aggregate interaction are known to have occurred in this country, the causes and effects of such interaction have been closely studied here.

The most serious of these types of chemical reaction is that between siliceous aggregates and the sodium and potassium hydroxides released during the hydration of the cement. The concrete can be cracked by the swelling of the alkali silicate gel formed in this way.

The paper describes measurements of the alkali content of British Portland cements and gives, in a series of tables, data on the percentage of alkalis extracted. Some suggested methods of reducing the alkali content of cements are discussed. The second part of the paper surveys the principal British aggregates from the point of view of possible reactivity with such cements.

In this country, flints, malmstones and acid or intermediate volcanic types of rock are the most likely sources of reactive material. It is concluded, however, that there is no reason to expect trouble with the normal British aggregates. Where large concrete structures may be involved it would be wise to examine new sources of aggregate for possible reactivity.

TOWN PLANNING DECISIONS

Petrol Pump Installation: Appeal Against L.C.C. Succeeds

AN appeal by Mr. Thomas Hale, a garage proprietor, against the refusal of the L.C.C. to allow him to instal two petrol pumps on the forecourt of No. 2 King's-avenue, Clapham, S.W., has been allowed by the Minister of Housing and Local Government, on condition that they are not used between 8 p.m. and 7 a.m.

The Minister states that the premises have long since acquired the appearance and character of a garage for which purpose they have been used for the past 40 years. He points out that the L.C.C. have put forward no proposals under the Development Plan which would require the termination of the present user, and states that the installation of two petrol pumps, on a forecourt which is already being used for the parking of cars, would make no material difference to the character of the premises.

Tree Preservation Order: Minister Upholds Council's Action

MR. R. LAMDIN, proprietor of the Fairmile Hotel, Portsmouth-road, Cobham, recently appealed against an order of the Esher U.D.C. that the trees along the frontage of his property must be preserved. The appellant contended that the trees were ugly, and said he wanted to cut them down and extend the lawn and flower beds which, at present, covered half of the frontage.

For the council, it was said that there were seven 100-year-old trees evenly spaced along the frontage of the site. They were perfectly sound and matched the delightfully wooded character of this particular stretch of the Portsmouth-road.

The preservation order has now been confirmed by the Minister, who has announced his dismissal of Mr. Lamdin's appeal.

Storage of Rubber on Rural Site: Council's Decision Upheld

THE Minister of Housing and Local Government has dismissed the appeal of Messrs. Bernard Chase against the refusal of the Lichfield R.D.C., acting on behalf of the Staffordshire County Council, to permit the continued use of some 12 acres of land at Drayton Bassett for the storage and packing of waste rubber and the erection of a permanent cover.

In rejecting the appeal, the Minister observes that the site is in a rural area, which should be preserved because of its proximity to Birmingham and the Black Country.

LONDON MASTER BUILDERS

Mr. Macmillan on a "Free and Fair Run for Private Enterprise"

THE scaling down of the high level of building costs was the all-important task which the industry must now concentrate upon, declared MR. HAROLD MACMILLAN, Minister of Housing and Local Government, at the annual luncheon of the London Master Builders' Association, held at the Park Lane Hotel, London, on January 20, and at which Mr. D. E. Woodbine Parish, president, presided.

The only way of achieving this aim in these modern days was by the application of efficiency, productivity, co-operation, ingenuity and mechanisation, he said. The old remedy of cutting wages was no longer possible.

Mr. Macmillan opened his address by referring to the speech made at the last annual luncheon of the Association by Mr. Dudley Cox, who was then president, in which he appealed to the Government for a "clear line to follow" and promised that given a lead, builders would respond speedily. The Minister then went on to explain how he and his colleagues had in the past year tried to give a clear lead to the industry. He spoke of the raising of the housing programme target, the change from the one in five to the one for one ratio for local authority and private enterprise housing; also the powers given to the local authorities to acquire sites for resale to private developers. For a whole year, he had been struggling with the Town and Country Planning Act and finally it had been possible to abolish the development charge. This decision to stop the development charge holding up development had been a wise step, he thought. Another step in the right direction was the simplification of the licensing system which the Minister of Works had succeeded in bringing about.

Opportunities for the Industry

"I am confident," Mr. Macmillan added, "that great progress can be made if full advantage be taken of the opportunities which are now available to the industry. Time must be allowed, however, for results to become apparent. A number of well-meaning but amateur solutions to outstanding problems have been put forward, but they are mostly red herrings. I would ask for a free and fair run for private enterprise."

He was aware that there were more troubles ahead, the Minister continued. There always were. So far as materials were concerned, bricks, cement and tiles were likely to be the chief worry in the near future. Last year it had been steel, but supplies of that were now much better. He would commend the excellent Economy Memoranda of the Minister of Works.

They might expect to hear some croaks from statisticians and other critics about difficulties that were now emerging as a result of the changes that had been made in the housing programme.

"I am sure that you are just as likely, or rather far more likely to move into shortages if the target is too low than if it is set high," said the Minister. It was true that maximum achievement depended to some extent upon the capacity of the plant in use, but it also depended a very great deal upon the mind of the producer.

Production was not fixed at a static rate as some of the economic surveys claimed, and he was convinced that it could be increased by the working of extra shifts and the application of the imagination of those in command.

In conclusion, the Minister paid a high tribute to the tremendous help Mr. Woodbine Parish had been to the building departments of the Ministry of Housing and the Ministry of Works. He had set a very high standard for himself and for others.

Earlier in the proceedings MR. WOODBINE PARISH welcomed and introduced the Minister who, he said, had carried out his duties with great distinction and success.

Annual Report

FOLLOWING the luncheon, the annual general meeting was held, at which the 81st annual report was presented by the president. Introducing the report, MR. WOODBINE PARISH said:

"The time for paying lip service to the need for increased productivity and cost reduction is past," he said, "and unless the industry collectively adopts a more vigorous attitude of mind which will reflect a far greater personal sense of urgency to solving the problem than exists at present, these two related and pertinent objectives will continue to prove elusive."

Never before had the industry been in greater need of positive leadership and of enlightened and forthright direction in the conduct of its work at all levels. Never before had a broad and liberal approach to the solution of its problems been so urgently required. But contrary to popular belief, the building industry generally was neither inefficient nor backward. In common with every other industry it was possible for them to improve their present performance by methodical study and applied common sense.

It was unfortunate that during the past year there had been an overt inclination towards witch-hunting in the *modus operandi* of the industry. This pastime had been based largely upon ill-informed criticism made by individuals with a limited knowledge of the very many complex problems facing the building industry and with a complete lack of understanding of the very damaging effect that their action might have upon maintaining the highest level of accord and good will among the various interdependent sections of the industry, and their quality of service to the public.

It would be quite unrealistic to suggest that there could be an immediate solution to all the problems facing the industry, but long-term plans must be formulated and put into operation without undue delay.

As master builders they must accept a high measure of responsibility for the future well-being of the industry. Their constant aim and purpose must be to improve and perfect their chief function—that of management.

The following extracts are taken from the report:—

Throughout the year the Association has continued to give emphasis to apprenticeship and has adopted various measures to stimulate recruitment. On March 31, 1952, the Apprentice Master Scheme came to an end in London and thus the entire responsibility of training apprentices reverted to the industry. The facilities for training about 200 boys each year which were provided by the scheme are therefore no longer available. Allowing for this loss the total intake of apprentices this year has remained nearly the same as in the last four years.

Early in the year the Apprenticeship Committee reviewed various suggestions and recommendations from the areas which were designed to improve the operation of the national scheme. After very careful consideration, a report embodying many of these suggestions was submitted to the National Federation. Unfortunately it was found that many of the Association's views were not accepted by some of the other regions but, nevertheless, certain proposed amendments have been endorsed by the National Federation and referred to the National Joint Apprenticeship Board. It is by no means certain that these amendments will be accepted by the operatives but, if they are, then more regional autonomy may be expected within the framework of the national scheme.

While it is a disappointment that in spite of continued efforts the intake of apprentices has not increased, the recent withdrawal of certain controls from the industry appears to have given some encouragement to those builders who have not hitherto accepted the responsibility of training apprentices, and it is greatly to be hoped that the New Year may bring a marked increase in the number of apprentices indentured.

Standard Form of Contract

The Association has continued to press for the use of the R.I.B.A. Standard Form of Contract without amendments, by local authorities, public bodies and other building owners. These representations have met with considerable success in many cases, but so far as the London County Council is concerned, the position remains one of deadlock, as indicated in the last annual report.

The Corporation of the City of London, as the result of discussions with the Association, are reconsidering their form of building contract, and it is hoped they may shortly decide to adopt the R.I.B.A. Form.

Representations on this matter have also been made to the nationalised industries, such as railways, gas boards and hospital boards, with varying degrees of success, but with the assistance of the National Federation some progress is being made.

Members have been fully advised of the unfortunate situation which appeared to be arising from the proposal of the Association of Municipal Corporations to prepare and issue their own form of contract for use by local authorities. Such a step would seriously prejudice the position which has been steadily built up over many years for the use of the R.I.B.A. form as a negotiated and generally accepted form of contract for building work of all kinds. It is to be hoped that the approaches made by the National Federation will lead to a satisfactory solution of this delicate problem.

Limit of Retention Fund

The Association has welcomed the issue of Practice Note No. 29 by the Joint Contracts Tribunal, as being a valuable step towards reducing the unreasonably large amounts of retention which, in many cases, were being held against the contractor during the often lengthy delays in the settlement of final accounts.

Standard Forms of Tender

Discussions have continued on the Liaison Committee with the Metropolitan and Outer

London Borough Surveyors' Associations, on the draft Standard Forms of Tender which had been prepared by the Association in response to a suggestion by the borough surveyors, for use in connection with the R.I.B.A. Standard Form of Contract. After considerable delay, it now appears that, apart from one or two minor drafting points, agreement has been substantially reached on the Liaison Committee on this matter, and it now remains for the forms to be formally adopted by the Borough Surveyors' Associations for recommendation to their members.

Notification of Tender Results

During the past year, the Association's attention has been drawn to a number of local authorities and other public bodies who have refused to supply adequate information to unsuccessful tenderers on the results of the competition. In each case the Association has made representations to the authority concerned, indicating the advantages to the building owner, to the builder and to the industry, of full publication of tender results immediately the decision has been made to let the contract. In several cases, these representations have been sympathetically received, resulting in a change for the better in the practice adopted.

The Association considered it unfortunate that during the year the Ministry of Works made a sudden change in its former practice, and declined to furnish tenderers with information. Representations were at once made to the Ministry by the National Federation, but so far these have been unsuccessful.

Prize Awards

It was noted in the last interim report that, as the second part of the Association's Educational Awards Scheme, it had been decided to make an annual award of £5 with citation to the best student in building subjects at each of the technical colleges in the London Region with a building department. These prizes were offered to some 22 schools in the London region and have been most gratefully accepted. A number of awards have already been made and others will follow at forthcoming prize-giving ceremonies.

Foremanship Training

Arrangements were again made for three separate types of course to be available in the London Region during the session 1952/53 as follows: (a) A course for builders' general foremen in accordance with the recommendations of the National Federation's Standing Committee on the training of foremen; (b) an introductory course to course (a); and (c) a course in supervision for supervisors engaged mainly on relatively small undertakings and maintenance work.

Publicity was given to the proposed arrangements, but the numbers of candidates coming forward for the courses were not as high as had been hoped. It was, however, possible to arrange courses of the three types at colleges distributed over the whole of the Region.

Technical Information Service

The Technical Information Service has continued to operate satisfactorily. Inquiries have continued to come to the technical information officer at a steady rate and the value of the Service is becoming more and more widely known. The Technical Information Sub-Committee has decided to issue, three or four times each year, a technical information bulletin based upon the inquiries received from members.

Housebuilding

The Regional Registered Housebuilders' Committee has met a number of times during the year and has continued to give close attention to the promotion of the interests of housebuilder members in every way possible. One of the most important tasks carried out was a survey of land held by builders in the London Region. It was felt that one of the major problems so far as London was concerned was that of the availability of building land and, in order to obtain a clear picture of the situation, a survey was carried out amongst all members to find out how much land they held, its location, whether services were installed and other relevant information. The results of the survey were so interesting that the permission of members was sought to pass the information to the Ministry of Housing and Local Government and the results both direct and indirect have been far-reaching.

A Foremen's Association

Early in the year the Association submitted to the London Regional Council of Builders' Foremen and Clerks of Works a detailed memorandum on the organisation of general foremen, indicating the lines upon which consideration might be given to the setting up of one association to represent builders' foremen in the London Region. This document has received most careful consideration by the Foremen's Council, and it is hoped that that Council will shortly be ready to discuss the matter further with the Association's representatives.

It is a matter of regret that during the year, one of the three constituent organisations of the Foremen's Council, namely, the Provident Institution of Builders' Foremen and Clerks of Works, decided to withdraw from membership of the Council, since they could not see their way to consider the possibility of amalgamation with the other organisations.

National Federation Awards

BEFORE BEGINNING the official business meeting, the president invited the president of the N.F.B.T.E. to present the National Federation Awards to prizewinners in the London Region. The Awards are given annually on the results of the Ordinary and Higher National Certificate Examinations for the year, and go to the best apprentices and young craftsmen and to articled students. The London Awards in the Ordinary National Certificate class this year are as follows:—

Apprentices and young craftsmen—1st prize, P. Finnerty, Tottenham Technical College (£25 and citation); 2nd prize, C. A. J. Mullis, S.E. London Technical College (£20 and citation).

Students other than craftsmen—1st prize, D. W. Hunt, Brixton School of Building (£25 and citation); 2nd prize, S. Fosbrook, Tottenham Technical College (£20 and citation).

Officers and Council

MR. GERALD HILL, director of Messrs. Higgs and Hill, Ltd., was elected president in succession to Mr. D. E. Woodbine Parish at the annual general meeting which followed the luncheon. Mr. R. S. Williams was elected senior vice-president and Mr. Laurence Holloway and Mr. K. C. F. Foster junior vice-presidents. Mr. Nigel Hannen was re-elected hon. treasurer.

The Council were elected as follows:—

F. L. Whitehead, A. H. P. Hudson, H. J. Falkus, H. H. Dexter, A. W. Yeomans, E. G. S. Buchanan, W. G. Lilly, E. S. Moss, H. W. Banks, K. J. Pearce, F. C. Steel, D. G. Howard, N. E. Wates, and G. Haslehurst. Mr. R. W. Brocksopp was elected hon. auditor.

The New President's Career

MR. GERALD HILL, M.I.O.B., the new L.M.B.A. president, is a director of Higgs and Hill, Ltd., and, with his three cousins, represents the third generation of the family on the board. He is the second member of his firm to fill the presidency; his father, the late Edmond J. Hill, having been president in 1916.

MR. GERALD HILL, who on Tuesday was elected president of the L.M.B.A.

Mr. Hill was educated at Gresham's School and Imperial Service College, Windsor. He served his apprenticeship with a firm of building contractors in Montreal and later in London with Messrs. Baker and Mallet, quantity surveyors. He attended the Brixton School of Building for 3½ years as a part-time student, and his first job with his firm was as a timekeeper and cost clerk when they were building Swan and Edgar's premises at Piccadilly-circus. He was appointed a director of the firm in 1935.

Higgs and Hill joined the L.M.B.A. in 1890, and Mr. Hill himself first came into prominence in the Association in 1946 when he was elected a member of Council. In 1947 he was appointed to the Administrative Committee, and in the following year he was elected to the Council of the National Federation. He has interested himself particularly in apprenticeship questions, and was chairman of the Apprenticeship Committee in 1951. He has also made a study of education for the building industry, and was the first chairman of the L.M.B.A. Education and Training Committee. He serves on a number of other committees connected with the L.M.B.A. and the National Federation, and is on the Building Apprenticeship and Training Council, the Consultative Committee of the City and Guilds of London Institute and the Advisory Committee of the South-East London Technical College. He is a member of the Livery of the Worshipful Company of Weavers, a freeman of the City of London and a member of the London Rotary Club, of which his father was in 1911 one of the founder members.

Higgs and Hill have been responsible for the construction of many famous buildings, among them the Tate Gallery, the Royal Naval College, Dartmouth, Liberty's, Swan and Edgar's and the Park Lane Hotel. Other buildings they have constructed include India House, the extension of the County Hall, the Headquarters of the London Fire Brigade and factories for Hoover's and Gillette's. They are also building the new University and Hospital for the West Indies at Kingston, Jamaica (illustrated in our last issue). They are at present engaged on the reconstruction of the Old Bailey, after the extensive bombing it suffered during the war, and the modernisation of its courts, the first four of which were completed in September and handed over to the Lord Mayor.

London Building (Constructional) By-Laws, 1952

MAIN VARIATIONS FROM THE 1937 BY-LAWS

By M. C. G. AYRE

THE following notes have been prepared to indicate the main differences between the new L.C.C. building by-laws, which came into operation on January 1, 1953, and the old 1937 by-laws.

In addition to the new by-laws (Publication No. 3790), copies of which can be obtained, price 3s. 6d., from the Council's publishers, Staples Press, Ltd., Mandeville-place, W.1; H.M.S.O.; or any bookseller, an Explanatory Memorandum has now been published (Publication No. 3796—price 1s.), which, apart from explanatory matter, contains useful Tables giving the sizes of timber to be provided to sustain various loads and a series of Tables of timber sizes for floor joists, roof and ceiling joists, purlins and rafters, suitable for two-storey dwelling-houses.

In the following notes, references to the 1937 by-laws are in italics.

Part I—General

BY-LAW 1.03—DEFINITIONS—

(i) **"Chimney," "chimney shaft" and "chimney stack."**—In the 1937 by-laws, "chimney" was not defined but was, by inference, a construction of bricks, blocks or concrete enclosing a flue, the flue area not exceeding 80 sq. ins. (See *by-law* 132(1) *and* (2).) The flue area is now unlimited, the only qualifying condition being that the chimney must be attached to or form part of a building.

In the 1937 by-laws, the area of the flue made the difference between a "chimney" and a "chimney shaft," 80 sq. ins. being the dividing line. (See *by-law* 119.) Now, if a flue exceeds 150 sq. ins. in area, that part of the material enclosing the flue but attached to or forming part of the building may be treated as a "chimney." The part projecting above the roof is treated as a "chimney shaft" or "chimney stack," according to whether the ratio of the height above its topmost lateral support to the least horizontal dimension at that support does, or does not, exceed six respectively. A free-standing construction of brickwork, surrounding a flue exceeding 150 sq. ins. in area whereof its height above its base exceeds six times its least horizontal dimensions, would also be a "chimney shaft."

(ii) **"Element of construction."**—An entirely new definition which is necessary in connection with a new Part of the by-laws—Part IX—Fire Resisting Construction. See later notes on Part IX.

(iii) **"Flat roof" and "Pitched roof."**—The line of demarcation is now 10 deg. instead of 20 deg. (See by-law 4, class 8.)

(iv) **"Flue."**—The 1937 definition (*by-law* 132(1)) applied only to "ducts not exceeding 80 sq. ins. in area through which smoke, etc.", and was applicable only to "chimneys." The new definition applies to all forms of flue, whatever the construction round it, and includes ducts through which fumes or vitiated air pass.

(v) **"Length."**—The expression "wall" now implies a length exceeding four times, instead of six times the thickness.

(vi) **"Prestressed concrete."**—A new definition as by-law 7.18 permits the use of prestressed concrete, subject to the approval of the Council.

(vii) **"Thickness."**—The thickness of a pier now includes the thickness of the wall from which it projects, thus avoiding the ambiguity in the 1937 by-laws.

(viii) **"Width."**—The expression "pier" now implies a width not exceeding four times, instead of six times the thickness. (See "Length.")

Part II—Dead and Imposed Load

Considerable technical alterations have been made to the corresponding requirements of the 1937 by-laws (*by-laws* 3 *to* 6 *inclusive*) so that the new by-laws are in agreement with Code of Practice C.P.3—Chapter V (1952)—Loading.

By-law 2.02—Imposed load.—(i) Reduced imposed loads on Classes 1-4 inclusive.

(ii) Range of loads permitted on warehouse, workshop and factory floors.

(iii) Reduced load on flat roofs where no access is provided to the roof. (See Class 9(a).)

(iv) Graded imposed load, depending on roof pitch. (See Class 10.) These loads are independent of wind loads, whereas in the 1937 by-laws the loads for pitched roofs were deemed to include wind. For wind loads on roofs see by-law 2.03(2).

(v) Reduced imposed loads on stairs, landings and access balconies (Class 11).

(vi) Reductions in imposed loads for multi-storey buildings are not now limited to framed buildings. (See by-law 2.02(2) (a).)

(vii) Reductions in imposed loads are now permitted on floors designed for more than 100 lb. per sq. ft (other than warehouse and garage floors and any floor used for storage purposes). (See by-law 2.02(2) (b).)

(viii) Reductions in imposed load are permitted on beams carrying large floor areas. (See by-law 2.02(2) (c).)

By-law 2.03 — Wind effects.—(i) Wind pressure is now taken on the full height of the building instead of 15 lb. on the upper two-thirds, and is dependent on the height of the building.

(ii) Wind pressure on projections above the general roof level is dependent on the height of the projection above ground level instead of being taken at 25 lb. per sq. ft.

(iii) Wind pressures and suctions on roofs for various angles of inclination are to be considered in conjunction with the imposed loads given in by-law 2.02(1) Table I. (See by-law 2.03(2).)

By-law 2.04—Curved roofs.—A new by-law giving the basis of design for curved roofs.

Part III—Materials of Construction

By-law 3.02—Aggregate for reinforced concrete (See *by-law* 9).—A little more latitude is now given in the selection and acceptance of the aggregate, and aggregates complying with B.S. 882 are accepted as complying with the by-law.

By-law 3.03—Aggregate for concrete (See *by-law* 10).—Aggregates complying with B.S. 882 are accepted as complying with the by-law.

By-law 3.04—Sand for mortar or plaster (See *by-law* 11).—Sand for plaster complying with B.S. 1198 or for mortar complying with B.S. 1200 is accepted as complying with the by-law.

By-law 3.05—Cement (See *by-law* 12).—(i) Reference to B.S. 915—High Alumina Cement is now made.

(ii) The various types of cement, other than a mixture containing High Alumina Cement, can now be mixed together.

By-law 3.07—Concrete (See *by-law* 14).—(i) The proportions of fine to coarse aggregate can be varied between the limits of 1 : 1½ and 1 : 2 as against 1 : 1½ and 1 : 2½.

(ii) Tables V and VI contain columns for a seven-day crushing strength.

(iii) Concrete Grades VI and VII have been deleted.

(iv) In Table VI, crushing resistances for 28-day strength for preliminary tests have been reduced, but have been increased for works tests.

(v) By-law 3.07(7) and 3.07(10) and Table VII give requirements for High Alumina Cement Concrete.

By-law 3.08—Steel and reinforcement (See *by-law* 15).—(i) Structural steel of high tensile quality complying with B.S 548 and B.S. 968 can now be used without making application to the Council.

(ii) The following types of reinforcement can now be used without making application to the Council: Hard drawn steel wire to B.S. 785; cold twisted steel bars to B.S. 1144; fabric reinforcement to B.S. 1221.

By-law 3.10—Mortar (See *by-law* 17).—A limitation is placed on the ratio of cement: sand in cement-lime mortar (See by-law 3.10(2).)

By-law 3.12—Bricks and Blocks (See *by-law* 19).—(i) Sand-lime bricks of Building Class "B" are now no longer permitted to be used for external walls, piers, chimneys or chimney shafts.

(ii) Resistances to crushing are related to a new Schedule IV, which gives the method of testing bricks or blocks.

(iii) The minimum resistance to crushing of hollow bricks or blocks for load-bearing purposes has been reduced from 1,000 to 750 lb./sq. in., for external non-load-bearing solid or hollow bricks or blocks from 1,500 for solid bricks and 1,000 for hollow to 500 lb./sq. in.

(iv) 500 lb. bricks or blocks for load-bearing purposes in two-storey dwelling houses, single-storey buildings and in the topmost storey of any other building are now permitted to be used.

By-law 3.20—Structural Timber—(See *Timber by-law* 3 *and Schedule*)—(i) Structural timber is now separated into two classes A and B and the species for each class specified.

(ii) The timber species specified are structural softwoods. Any other timber (whether softwood or hardwood) proposed to be used will require the Council's approval.

(iii) Defects and natural features ("gross features") of timbers are limited by reference to a new Schedule IV.

(iv) The methods of measuring "gross

features" and of measuring the "moisture content" are to be in accordance with B.S. 1860.

Part IV—Sites of Buildings, etc.

By-law 4.03—Covering of sites (See *by-law* 28)—(i) 4-in. instead of 6-in. site concrete is now permitted on a consolidated bed of hardcore.

(ii) 4-in. site concrete not inferior to Grade III in by-law 3.07 is permitted if the district surveyor is satisfied with the condition of the site.

(iii) Site concrete can now be omitted in certain cases. (See by-law 4.03(2).)

(iv) A suspended concrete ground floor can be considered as site concrete. (See by-law 4.03(4).)

By-law 4.04—Voids beneath certain floors (See *by-law No.* 141 (2)(*a*).)—In by-law 4.04(2), additional precautions are required for parquet floors or boarded floors bedded on site concrete, which were presumably the floors covered by the wording in the old by-law "other than solid wood bedded on concrete."

By-law 4.05—Foundations (See *by-law* 33)—Boundary walls can by by-law 4.05(5) be used as enclosures to single-storey buildings if the district surveyor is satisfied as to stability.

By-law 4.06—Pressure on foundations (See *by-law* 35)—The maximum permissible pressures for concretes of Grades I, II and III have been increased and permissible pressures for Grades IA, IIA and IIIA concretes included.

(To be continued)

NATIONALISATION OF THE BUILDING INDUSTRY

"First Task of Next Labour Government"

A CALL for the nationalisation of the building industry to be made the first task of the next Labour Government is made by Mr. George Lowthian, general secretary of the Amalgamated Union of Building Trade Workers, in the current issue of the Union's quarterly journal.

Mr. Lowthian goes on to say that "the nation-wide practices of the various so-called Builders' Conferences to abolish competition in tendering, and the levy of exorbitant charges, demonstrate the anti-social character of private enterprise in building. . . . Indeed in every respect, the industry is over-ripe for nationalisation."

Referring to the plan for nationalising the building industry adopted by the annual conferences of the N.F.B.T.O., the article points out that this provides for the State to take over the firms producing building materials as well as all building firms with more than 20 employees. Hitherto, the article continues, "the Labour Party has burked the issue of nationalising the building industry because of its immense size and ramifications. . . . Aneurin Bevan was scared of the size of the job. But the plan of the N.F.B.T.O. reduces the nationalisation to manageable proportions, renders it no more difficult than nationalising mining, transport or iron and steel. . . . Nationalisation offers the only way to start on the vital, noble task of transforming the building industry into a social service. . . ."

BUILDING WAGES

Extra 2d. an Hour for Operatives and Labourers

THE National Joint Council for the Building Industry met on January 14 and carried out the annual review of wages under its constitution. The Council found that an increase of 2d. per hour becomes due to operate on February 2 in accordance with the sliding scale based on the retail prices index.

The Council heard evidence on a number of claims. These included an application from the operatives for a further general wage increase of 6d. per hour and for various allowances under the working rules, and an application from the employers for rearrangement of working hours as between summer and winter, having regard to hours of daylight and summer weather.

Having heard the evidence, the Council adjourned to enable both sides to examine it; a further meeting of the Council is to be convened within a fortnight.

CHANGE IN CORONATION DECORATIONS

Westminster Council's Decision

THE CORONATION COMMITTEE of Westminster City Council has abandoned "suspended features" Coronation decorations for Victoria-street, Tothill-street, Waterlooplace and Pall Mall. The features were original proposals mentioned in the report of Sir Hugh Casson, F.R.I.B.A., who is planning the Council's decorations. A spokesman of the council said on January 16 that Sir Hugh Casson is being asked to consult the Victoria-street Association and the Piccadilly and St. James's Association with a view to preparing an alternative scheme.

The spokesman said the features would obscure the view from buildings. The supports of the decorations, as planned, would have required a great deal of strengthening, and this would have added to their cost.

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BUILDING EFFICIENCY

National President Says "Freedom the Key"

SPEAKING at the annual dinner of the South Wales Federation of Building Trades Employers at Cardiff on January 16, MR. J. IAN ROBERTSON, National president, said that quite recently the old charges had been repeated that the building industry had failed to modernise itself, that it had too many small firms and that it could not afford to, or did not, avail itself of mechanical equipment.

"Those making such charges should read once again the report made in 1950 by the Working Party which was set up by the Labour Government and which made an exhaustive inquiry into the industry," Mr. Robertson declared. "That report made it clear that, having regard to the variety of sizes and types of jobs which the industry is called upon to carry out on widely differing sites in all parts of the country, the present set-up of the industry must be maintained if the necessary flexibility is to be ensured. And one of the conclusions of the report was that there were no grounds for saying that mechanical aids were not in use so far as they were readily available and could be profitably used. Our industry is a highly competitive one and any builder who neglects to equip his operatives with modern tools knows that he runs the risk of putting himself out of business. That is why the plant demonstrations organised by the Ministry of Works have had such large attendances and why large numbers of orders for mechanical equipment which run into millions of pounds have been placed with the manufacturers.

"The more freedom we are given, the greater the confidence with which we can plan ahead, and the more shall we make use of mechanical equipment and of every other aid to increased production and reduced costs."

LIGHTING COMPETITION

Winning Team Announced

WINNERS have been announced in the first biennial Dow Prize Competition organised by the Illuminating Engineering Society. The competition was held to encourage collaboration between students of illuminating engineering or those branches of engineering concerned with lighting and students in other fields in which lighting plays an important part. The closing date for the competition was November 30 last, the prize being a cash award of £75.

The competition took the form of the layout, artificial lighting and decoration of a ground-floor showroom of a provincial shop selling sports goods. As the competition was an exercise in collaboration between art and science, applicants were informed that while originality of design, effectiveness of layout and suitability of lighting would all receive consideration, special recognition would go to schemes in which all three blended in unity.

Twenty-six entries were received, nearly all being from teams of engineers and architects. Members of the winning team were:

W. D. Tyrrell, Croydon Poly. (illum. engr.); T. A. D. Bindon, S.E. London Technical College (elect. engr.); E. W. Uglow, S. M. Gray (Misc), C. G. Crowfoot, E. G. Smith, all Regent-street Poly. (architects).

Entries for the competition will be on view at the Lighting Service Bureau, 2, Savoy-hill, W.C.2, on February 25 at 6 p.m.

BRICK SUPPLIES

Need for Economy In Use

[By Our Special Representative]

THE need for a measure of economy in the use of bricks, to ensure that the 1953 building programme is not held up by a shortage of them, appears to be realised in many quarters of the industry. The Minister of Housing and Local Government has asked local authorities to save on bricks and has also made very active efforts with the other users of bricks: the power stations, factories, etc. Generally speaking, however, there seems to be confidence that the programme will not suffer or, if it does, not seriously, by an inadequate supply of bricks.

Speaking at Bolton on January 15, MR. DAVID ECCLES, Minister of Works, said he was fairly confident about the supply of materials in the New Year. He had been assured by the brick industry in the north-west that more bricks would be produced; cement manufacturers would deliver more cement and there would be more steel.

MR. H. HALLIDAY, the director of the National Federation of Clay Industries, said brick production in 1952 was between 6,600m. and 6,650m., which was completely adequate to meet the 1952 building programme. In fact, he said, the deliveries of bricks at the end of 1952 were sufficient for the completion of 270,000 houses. As far as is known at present, the total number of houses completed in 1952 was between 230,000 and 240,000, so bricks had already been supplied for 30,000 to 40,000 of the 1953 completions.

Mr. Halliday also pointed out that many more bricks were lying on sites throughout the country, although exactly how many would be impossible to say.

He referred to the hiatus that occurred in building at the beginning of 1952 brought about by unsettled conditions, when the output of bricks was not being fully taken up. The manufacturers had stocked up as much as they were able and production had to fall. Given a steady demand, the position in 1953 should be better in terms of increased production, and nationally, he thought, manufacturers would be able to meet the demand. Shortages might arise in some areas and there would probably be a surplus in others, but the problem of distribution was made more difficult by the high cost of transport.

Mr. Halliday thought it was more than likely that there would be sufficient bricks for the 1953 programme, and if there was a shortage it would only be marginal. The exact margin would be difficult to assess as the final demand was unknown.

Brick manufacturers, he said, were really alert to the position and would continue to increase their production, but he made the point that if the industry received some relief from the heavy penal taxation imposed on them, as on other industries, their production would be even better.

MR. N. J. WIGLEY, secretary of the Midland Federation of Brick and Tile Manufacturers, is not so optimistic. In a recent statement issued by him on brick production problems he said: "There are no substantial signs in any part of the brick and tile industry of a material increase in productive capacity which can be confidently related to the raised building constructional levels which the Government has fixed for 1953."

In his report for 1952, MR. G. W. A. MILLER, president of the Stock Brick Manufacturers' Association, said that given freedom within the limits of the national economic structure, the stock-brick industry, which was down to about 10 per cent. of capacity during the war years, could be relied upon to meet its obligations.

During 1952 the benefits of mechanisation and of the opening of new works had become increasingly obvious. There had been an important increase in production, which he hoped would be continued as mechanisation was gradually extended and additional capacity developed.

A spokesman of the National Federation of Registered House Builders said that the building programme for 1953 was unlikely to be affected by a brick shortage if the greatest economy was exercised in the use of bricks. It was absolutely essential that builders, both house-builders and contract builders, should use bricks to the best advantage and eliminate all waste.

An important aspect of the position was stressed by an official of the London Brick Co., Ltd., who thought that the demand probably appeared much heavier than it was in fact, because of the extent to which requirements were being duplicated. It was often possible to detect duplication within his own company but orders could be repeated many times over with other companies and it was impossible to ascertain this.

The 1952 production of his own company had reached a record level and it was their policy to continuously increase their capacity. But he pointed out that the extent to which they could increase production was governed by the amount of money left after heavy taxation.

Generally speaking their labour requirements had been met and even with the increased productive capacity under way he did not anticipate a shortage of labour.

Some Suggestions for Ending Shortage

REPLYING to a statement by Mr. Norman Wigley, secretary of the Midland Federation of Brick and Tile Manufacturers, reported in our last issue, that unless brick makers received financial help, mass importation of Belgian bricks might add about £140 to the cost of every house built in the Midlands, MR. JAMES TURNER, Building Trades Officer of the Transport and General Workers' Union, said in Birmingham on January 16 that Government subsidy would never solve the brick shortage because many brickyards could not be modernised.

Mr. Turner offered two suggestions. First, a long-term policy by which the Government or large municipalities built large, modern brick-making plant. Second, on a short-term policy, that sand-lime bricks be made for internal use. These bricks did not have to be burned, he said, and they would cost only about £2 per thousand.

BELGIAN BRICKS

Newcastle Committee Undecided

NEWCASTLE HOUSING COMMITTEE are having second thoughts about buying the Belgian bricks offered to them recently, as reported in our issue of January 2.

When the offer was made in December the Committee recommended that it be accepted, but their report has not yet been before the City Council.

On January 15, however, they agreed unanimously that no decision should be made until after a full report by Corporation officials on the terms and costs that would be involved.

CHEAPER BRICKS

A Midland Experiment with Ash

ASH from the furnaces of a power station is being mixed with clay in a Midland experiment to provide builders with cheaper bricks.

The experiment, thought to be the first of its kind in Britain, may also solve a long-standing problem: what to do with 250,000 tons of ash left each year at Birmingham's giant Hams Hall power station.

Eight columns of the ash bricks are now undergoing wind, frost and rain resistance tests in a yard at the power station following satisfactory scientific tests.

Mr. F. W. Skelcher, chief generating engineer of the British Electricity Authority in Birmingham, said recently: "The bricks have already been put through a lot of tests, including compression, and have stood up to them very well.

"What we are trying to find out now is how they stand up to the weather. Scientists from the Department of Scientific and Industrial Research will come from London to examine the test columns about next April, by which time they will have gone through the worst winter weather.

"Disposing of the ash from the power stations has become quite a problem, and if it could be put to such a useful purpose as making building bricks we should be very glad."

The test bricks were made by two Midland firms, Knowle Brickworks, Bentley Heath, and J. Jackson and Sons, Ltd., Bickenhill.

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BUILDING MATERIALS IN 1953

Mr. Eccles' Confidence about Supplies

In 1952 the building industry had consumed nine million tons of cement, compared with eight million tons in 1951, and bricklayers had laid 600 million more bricks, said Mr. David Eccles, Minister of Works, when he opened a modern building exhibition at Bolton on January 15. Both achievements, he said, had been beyond expectation, but he asked whether the rising tempo of building would be maintained in the New Year.

The much-needed houses, schools, and productive buildings could be provided if the building industry lived up to modern techniques and methods. He was fairly confident about the supply of materials. Only that morning he had had a conference with representatives of the brick industry in the north-west, and was assured that more bricks would be produced; cement manufacturers would be able to deliver more cement, and there would be more steel.

It was not expected that the number of men employed in the industry would greatly increase, but there was a cloud on the horizon. His Ministry was disturbed by the falling off in the number of apprentices. The industry needed 110,000 apprentices, and had got only 80,000. In the north-west the shortage was serious. Building ought to appeal as a good career.

DECORATING COMPETITION

Winning Awards

The following list of prize-winners in connection with their 150th anniversary competition of Art in Decoration, Design and Heraldry, has been issued by Thos. Parsons and Sons, Ltd., 70, Grosvenor-street, New Bond-street, W.1. The judges were Messrs. J. Lawrence, F.R.S.A., C. H. Eaton, F.R.S.A., and E. Shadbolt. The entries, submitted by students at technical schools, are on view at the above address until January 30 (Monday to Friday, 10 a.m. to 5 p.m.). The prize-winners in the various sections were:

Graining and Marbling (under 18 years): (1) K. Jukes, Bradford; (2) A. R. Andrews, Ipswich; (3) M. Jones, Leicester.

Free Rendering of Historic Ornament (under 18 years): (1) M. G. Smith, Burton-on-Trent; (2) E. Robertson, Sheldon, Nr. Deal; (3) B. Chesterman, Wigston.

Heraldic Design (under 18 years): (1) M. G. Smith, Burton-on-Trent; (2) G. Fern, Syston; (3) P. H. Bird, East Ham, E.6.

Graining (over 18 years): (1) G. Dakin, Leicester; (2) J. Tennant, Lewisham, S.E.13; (3) A. English, Debden.

Free Rendering of Historic Ornament (over 18 years): (1) C. De L. Pascoe, Highbury, N.3; (2) B. G. Lucas, Gosport; (3) C. L. Godfrey, Portsmouth.

Inn Sign: (1) W. Larn, Canning Town, E.16; (2) W. Boem, Dagenham; (3) J. Hill, Cheltenham.

Scumbling: (1) B. Manning, Grays; (2) R. Baker, Grays; (3) A. Eldridge, School of Art, Eastbourne.

Texture: (1) E. J. Hide, School of Art, Eastbourne; (2) D. J. McGarry, Barnsley; (3) J. Barker, Northampton.

Marbling (over 18 years): (1) T. L. Jackson, Leicester; (2) R. Hart, Chesterfield, Nr. Whitstable; (3) P. Lowe, Dover.

Perspective Design for Interior: (1) G. J. Dare, Sidcup; (2) A. Hirst, Barnsley; (3) T. D. Croft, Leicester.

Higher Education

The annual report for 1951 to 1952 submitted to the local education authorities of London and the Home Counties by the Regional Advisory Council for Higher Technological Education has now been published. Copies may be obtained from the Secretary of the Council, Tavistock House South, Tavistock-square, W.C.1.

FACTORY BUILDING

Prospects for the Year

Mr. Hugh Molson, M.P., Parliamentary Secretary to the Ministry of Works, said at Ashton-under-Lyne, on January 16, that it had been alleged by the Socialists that the increase in house-building had only been achieved at the expense of other necessary building, such as factories, schools and hospitals. It was true that there had been a decline in the amount of factory building started in 1952, but this was due to a shortage of steel which began before the Conservatives came into office.

"With the increase in steel production we are estimating an increase in factory production this year of at least 20 per cent. over what was achieved last year," Mr. Molson continued. "Despite the reduction in factory building, the total output of the building industry on new work other than housing was nearly five per cent. higher in 1952 than in 1951.

"This increased output is largely due to an increase in production of building materials for which the Ministry of Works is responsible. Deliveries of bricks were last year ten per cent. above the deliveries in 1951. It is this that has made it possible for the same number of bricklayers to lay nearly 10m. more bricks a week."

PLAYGROUND EQUIPMENT

St. Pancras Invites Suggestions

St. Pancras Borough Council is proposing to provide children's playgrounds at Cumberland Market and on other sites in the borough, and invites suggestions for easily constructable equipment suitable for use by children and adolescents and differing from the usual present-day playground equipment.

Suggestions in sketch form should be submitted to the Town Clerk at St. Pancras Town Hall, Euston-road, N.W.1, not later than Saturday, February 21 next. The question of payment for any design used by the Council will be the subject of mutual discussion.

A NEW PUBLICATION

CHURCH ROOF COVERINGS

A survey of alternative materials and their method of use, prepared by a committee set up by the Central Council for the Care of Churches in conjunction with the Society for the Protection of Ancient Buildings.

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BUILDING TENDERING

Discussions With N.F.B.T.E. To Start Soon

Mr. J. Ian Robertson, National President, speaking at the annual general meeting of the Eastern Federation of Building Trades Employers at Cambridge, on Wednesday, said: "There has been much comment recently about tendering for building jobs, and representatives of the National Federation will soon be getting around the table with representatives of the R.I.B.A. and the R.I.C.S. to examine this difficult and complicated subject. It will need very careful thought indeed because, before changes are suggested, we must be sure that they are real improvements to a system which, by and large, has worked reasonably well in the past. The National Federation is most anxious, particularly at this time of high prices, that there should be the fullest possible competition in all sections of the building industry."

HOME OWNERSHIP

Once-for-all Grant in Lieu of Annual Subsidy Advocated

Mr. Harmar Nicholls, M.P., Parliamentary Private Secretary to the Assistant Postmaster-General, speaking at Burton-on-Trent on January 16, said that the average yearly number of houses erected between 1935 and 1938 was 358,831. Of this, only one in five, or 77,755, were built by local councils. The remaining 281,000 were built privately, mainly occupied by men earning between £5 and £10 a week.

At the present time the position was almost exactly reversed. Of the 275,000 houses under construction for 1953, 238,000 were for local councils, all carrying an annual subsidy of £35 12s. Over the 60 years' life of the subsidy each council house showed a loss of £2,000 not covered by rent income.

"This year alone the housing programme is beginning a debt for taxpayers and rent payers which over 60 years will amount to £476m.," Mr. Nicholls declared. "This could be mitigated if a once-for-all grant made the £8-a-week workman an owner-occupier instead of a council-house tenant. It is also good Conservatism."

ECONOMY IN THE USE OF TIMBER

New M.O.W. Advisory Leaflet

The latest advisory leaflet, "Care in the Use of Timber," No. 29 in the Ministry of Works' series, has been compiled to guide the man on the job in making the best and most economical use of our stocks of current supplies of timber.

It takes account of the fact that timber for general building work may be of the lower commercial grades. Thus, hints are given on site storage of both dry and partly seasoned timber; and a section is devoted to explaining how to deal with knots. Diagrams illustrate various kinds of knots and the critical points of tension in rafters, ceiling and floor joists. The accompanying text explains how to use knotted pieces to the best advantage.

Advice is given on "handling" and on "selecting and cutting," and there are reminders on the precautions to be taken against dry rot and when painting.

Copies of Leaflet No. 29 are obtainable from H.M.S.O., single copies 3d. each, special prices for larger quantities.

OVERSEAS BUILDING

[From Our Own Correspondents]

* *British West Indies—Trinidad.*—Mr. G. H. Brinkley, of G. H. Brinkley and Associates, 87a, Cipriani Boulevard, Port of Spain, is desirous of securing agency representation for the whole of the British West Indies, on a commission basis, in respect of the following U.K. manufactures:—

Household and builders' hardware; tools; electrical goods and equipment, including cable; electric tools; meters; household appliances; mechanical appliances, etc.

Telephone inquiries should be made to the Board of Trade Commercial Relations and Export Department, Tel.: Trafalgar 8855, Ext. 2502.

Guatemala.—The Government of Guatemala has announced that it is to embark on a five-year plan of public works at a total cost of some £8m. The work will be in three parts, and will cover the construction of the new port installations at Santo Tomas in the Bay of Amatique, near Puerto Barrios, the construction of a hydro-electric plant with a capacity of 27,000 kilowatts at a place called Junun, near Palin, and the laying of 1,000 kilometres of up-to-date highways in the Pacific coastal area. Of interest to exporters of materials will be the fact that the programme is to be financed by the issue of Treasury bonds which are expected to be recovered by a 6 per cent. import-export tax.

Italy.—News has just arrived from Italy that gives the impression that the Fiumicino airport project which was held over some time ago will now get started. As more attention is now being paid to air-travel it is likely that building will commence some time this year. Some modifications of the original plans are known to have been made, but so far these have not been publicised. The Italian Air Ministry or the Italian Ministry of Civil Aviation may be in a position to give information to contractors in the U.K.

Israel.—A modern plant for the manufacture of "Pyrex" glass products is to be established in Jerusalem by a private investor in conjunction with American Pyrex glass companies. The private investor is an Israeli. So far as is known $1m. are to be invested in the plant. Designs for this plant have not yet been made as the project has just been finalised at the negotiation stage. Inquiries should be made at the office of the Commercial Attaché of the Israeli Legation in London.

Rhodesia.—Salisbury is to have a £30,000 Greek neo-Byzantine cathedral to seat 400 people. Plans and drawings of the proposed cathedral have been completed, and £10,000 collected. The remaining £20,000 has been promised by Greeks throughout Mashonaland. The City Valuator has informed the builders that it may be possible to offer a plot on the site of a proposed racecourse, but nothing definite has been promised. At present the racecourse site does not belong to the Municipality, but negotiations for its transfer are going ahead. As soon as the transfer is through, and plans have been completed for the use of the large acreage of the racecourse, the Council will try to allocate part of it to the Hellenic community for this cathedral. . . . A crematorium of modern design is to be erected at the new cemetery at Warren Farm, Salisbury, at a cost of about £35,000. The construction of the crematorium was approved recently by the City Council. The building has been designed by the City Architect's Department and will be built by the Council's own building section. The building will consist of a chapel entered directly from the main entrance lobby and will provide seating for 50 people with a side aisle which can serve as an overflow to the main chapel. The design of the whole chapel has been centred on the Catafalque, which will be in the form of a raised dais with a simply designed lectern. . . . The Lake McIlwaine Water Scheme at Salisbury is nearing completion. The Trafalgar Court Scheme in King's-crescent will reach its maximum height in June and will near completion by the end of the year. . . . At Gwelo several large concerns have bought industrial sites and building will begin shortly. These plans will cover a number of industries, the most important of which will be processed chrome.

* From the Board of Trade Special Register Information Service.

TRADE NEWS

Cement Production Up

During 1952 deliveries of cement from the 26 Blue Circle Group works in this country exceeded those of the previous year by more than 720,000 tons. This additional tonnage was absorbed almost entirely by the home market. The programme of expansion and development of the Group's works makes provision for an even greater output this year.

Price Reductions

An announcement has been made by the Hotpoint Electric Appliance Co., Ltd., of Peterborough, that a reduction has been made in the list prices of their "Torribar" immersion heaters and circulators. Full information about the reductions, which carry a corresponding decrease in purchase tax, can be obtained from the company's nearest branch office. Prompt delivery of the items is understood to be available.

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A MICROPOROUS PAINT which deals effectively with condensation and humidity. It is applied by brush requiring no primers and will adhere to all dry surfaces—wood, plaster, concrete, etc. It has a covering capacity of 16-18 square yards per gallon. Sets in a hard matt finish and is available in various colours as supplied to the Air Ministry, G.P.O., Gas Board and leading contractors.

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NEWS IN BRIEF

Reconstruction of Lynmouth

Devon County Council at Exeter on January 15 unanimously approved in principle the "intermediate" plan for the reconstruction of Lynmouth. As reported in our last issue, this plan, involving an expenditure of some £330,000, was accepted by the Lynton Urban Council on January 13.

Church Homes for Aged Clergy

In the "Week's Good Cause" next Sunday (January 25), Mrs. Geoffrey Fisher, wife of the Archbishop of Canterbury, is to broadcast an appeal for the Church of England Pensions Board's homes for aged and infirm clergymen and for widows of clergymen. Those who have sympathy with this work may send contributions to Mrs. Fisher at Lambeth Palace, S.E.1.

Wood Preservation

The Record of the 1952 Annual Convention of the British Wood Preserving Association, held at Cambridge University last June, has recently been issued. This contains copies of the papers presented, and can be obtained, price 8s. 6d., from the Association, at 6, Southampton-place, W.C.1.

Council's Tendering Proposals

At a special meeting on January 6 of Newark Town Council it was decided to compromise on the question of publicly inviting tenders for council house building. Tenders will be invited for 16 houses only. Prices of a further 184 will be negotiated between the council and two firms, George Wimpey and Co., Ltd., and Ernest Coleman, Ltd.

Advanced Courses

A bulletin of special courses in higher technology to be held early this year in the London and home counties region has been issued by the Regional Advisory Council for Higher Technological Education. They are as a rule part-time courses, but specially arranged full-time courses of under three months' duration are also included. Copies may be obtained from the Secretary at Tavistock House South, Tavistock-square, W.C.1, at 1s. 6d. each.

British Standards

The following British Standard Specifications have been issued by the British Standards Institution, 24, Victoria-street, S.W.1: B.S. 740, part 2, "Portable Fire Extinguishers of the Foam Type (Gas Pressure)," price 6s.; B.S. 1906, "House Couplings (Air and Water)," price 10s.; and B.S. 1919, "Hacksaw Blades," price 3s. 6d.

Deputy City Surveyor

Liverpool Corporation Chief Officers' Selection Committee has selected the following candidates for interview for the post of deputy city building surveyor at a salary of £1,250, rising by annual increments of £50 to £1,500 a year. There were 41 applicants for the post: Messrs. G. H. Barrett (44), chief building surveyor, West Ham; J. Bennett (35), chief assistant engineer, Liverpool city building surveyor's department; F. Caldwell (33), senior assistant building surveyor, Manchester city architect's department; F. D. Entwisle (40), chief building surveyor, Bootle engineer's department; B. Johnson (57), chief assistant surveyor, Liverpool city building surveyor's department; and H. E. Pollard (46), city building surveyor, Portsmouth.

The SCOTTISH BUILDER

Building Knowledge Ahead of Practice

A GREAT weakness of the building industry to-day was that knowledge was well ahead of practice, said COMMANDER T. D. GALBRAITH, Joint Under-Secretary of State for Scotland, when he opened an exhibition in the Building Centre, Glasgow, on January 15. He appealed for more people to go to the Centre in search of new ideas.

"In the last decade," he said, "great new discoveries have been made about the use and application of different materials, and striking new building techniques have been developed. It is a pity that only on comparatively few building sites are these new discoveries and techniques being employed as vigorously as they might." He continued:

I do not wish to suggest that we have made no strides at all. The completion of around 30,000 houses in Scotland last year was a magnificent achievement which resulted in part from a greater readiness to take advantage of these new ideas. But the future holds out still brighter prospects, and a still more vigorous challenge. We are only beginning really to make inroads on Scotland's housing problem. This year we must try to build even more houses than we did in 1952, and we are going to have to do this while relying upon the same building force and a supply of basic materials, like bricks and cement, that will not be very greatly increased. I am convinced that we can do this. I am sure that we will do it if we make greater use of space-saving techniques, and of the kind of new building ideas that this centre seeks to spread. I believe we must do it. As I have said before, it seems to me morally wrong, and stupid as well, to build houses by out-of-date methods, or to unnecessarily lavish standards at a time when in Glasgow alone the census showed over 1,600 families were living more than six to a room.

NEW BUILDINGS

Ayrshire.—Plans in hand for the erection of 78 houses at Adamton-rd., Prestwick, at an est. cost of £123,000. The architect is James Melrose (F.), Municipal-bldgs., Prestwick.

Glasgow.—Plans to be prepared for new halls at Bellrock-st. for the Church of Scotland, for which the architects are Wylie, Shanks & Wylie (F. & A.), 120, Blythswood-st., Glasgow.

Glasgow.—Plans to be prepared for new offices, etc., for Donaldson & Filer, Ltd., which will be erected at Cogan-st., Pollockshaws. The architects are James Taylor Thomson, MacCrae & Sanders (F. & A.), 212, Bath-st., Glasgow.

Glasgow.—Plans to be prepared for new public school to be erected at Hallside. The architect is John MacNab (F.), 129, Bath-st., Glasgow.

Glasgow.—Plans prepared for the Clydebank Co-operative Society, Ltd., for reconstruction and additions scheme at Blairdardrie-rd. The architects are Stewart & Paterson (F.), 110, Blythswood-st., Glasgow.

Hawick.—Roxburgh C.C. have plans in hand for additions to the High School est. to cost £15,500. The architect is S. W. Milne (A.), County-chbrs., Newton, St. Boswells.

Lanarkshire.—Plans to be prepared for scheme of 40 houses to be erected at Parkhead housing site. The architect is Samuel MacColl (A.), County-chbrs., Rockford-st., Hamilton West.

Lanarkshire.—C.C. to carry out a development scheme at the farm of Broomhill, of which the first part is a new steading, at an est. cost of £10,650. The architect is William Watt (F.), County-chbrs., Albert-st., Motherwell-Wishaw.

Lanarkshire.—Plans prepared for the White Rock Co., Drury-st., Glasgow, for additions and other works at their works at Bargeddie. The architects are Gavin Paterson & Son (A.), 147, West Regent-st., Glasgow.

Stirlingshire.—Plans in hand for the erection of 18 houses at Langlass est. to cost £28,000. The architect is William Gibson (F.), Master of Works Offices, West Bridge, Falkirk.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 26.

***Bristol City C.**—Conversion of "Granby House," Bedminster. City A. Dep. £2 2s.

***†Southampton B.C.**—Chief fire officer's house at Bassett-ave. Boro' A. Dep. £1. Tenders by February 13.

JANUARY 28.

***†Flintshire C.C.**—School at Broughton. County A., Llwynegrin, Mold. Dep. £3 3s. Tenders by February 23.

JANUARY 30.

***Bristol B.C.**—Four classrooms in "Medway" timber construction at Blaise Primary School, Henbury. City A. Dep. £2 2s.

***†Hampstead B.C.**—33 flats at Kilburn Priory and Greville-rd. T.C.

***†Peterborough T.C.**—Six shops and 5 flats, etc., Hill-close, Eastfield estate. F. J. Smith, City E. & S. Dep. £2 2s. Tenders by February 16.

***†Plymouth City C.**—Ambulance sub-station at Crownhill. City A. Dep. £3 3s.

***†Sevenoaks R.D.C.**—10 dwellings at Latymers, Penshurst. E. & S. Dep. £2 2s.

JANUARY 31.

***†Anglesey E.C.**—Primary school at Holyhead. County A., Llangefni. Dep. £3 3s.

***†Cardiganshire C.C.**—Proposed Dinas secondary modern school, Cefullan, near Aberystwyth. County A., Aberayon.

***†Farnborough U.D.C.**—25 houses, Empress estate. E. & S. Dep. £3 3s. Tenders by February 19.

***†Middlesbrough B.C.**—Primary school, Ormesby-rd. Director of Education, Woodlands-rd. Dep. £5 5s.

***†Northumberland C.C.**—Central kitchen at Seaton Burn. County A. Dep. £2 2s.

FEBRUARY 2.

***†Birmingham City C.**—Contract 210, 40 dwellings at Gilbertstone estate, Sheldon; contract 244, 12 houses at Gressel-la., Sheldon; contract 246, 6 dwellings at Hawkhurst-rd., King's Heath; contract 255, 12 bungalows at Houldey-rd., West Heath; and contract 279, 12 dwellings at Gerrard-st., Lozells. City E. & S. Dep. £2 2s. per contract.

FEBRUARY 6.

***†Merthyr Tydfil B.C.**—Dining-room and kitchen, Quakers Yard Grammar School. B.E. & S. Dep. £2. Tenders by February 21.

FEBRUARY 7.

***†Kingston B.C.**—Conversion of 10 flats. A. B. Rogers, T.C. Dep. £2 2s.

THE COST OF BUILDING

Variations from 1939 to date shown as a Chart

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Liskeard R.D.C.—12 houses and site works at Menheniot. Higman and Ford, architects, The Parade. Dep. £3 3s.

***†Old Fletton U.D.C.**—88 houses at Chapel-st., Stanground. Ruddle & Wilkinson (F./L.), Long Causeway-chbrs., Peterborough. Dep. £2 2s.

Wainford R.D.C.—Four houses and site works. J. Owen Bond, architect, St. Faith's House, Mountergate, Norwich. Dep. £2 2s.

FEBRUARY 9.

***Aycliffe Dev. Corpn.**—(a) 178 dwellings and 9 garages, and (b) 4 shops, 4 maisonettes, 7 garages and convenience. A. W. Thomas, General Mgr., Newton Aycliffe. Dep. £2 2s. each.

***†Bristol City C.**—Secondary school at Ashton Park. City A. Dep. £2 2s.

Knaresborough U.D.C.—Erection of 83 houses on the Manor estate. F. Tranmer, architect, 3, Victoria-ave., Harrogate. Dep. £2 2s.

Norfolk C.C.—Eight houses on various sites. County A., 27, Thorpe-rd., Norwich.

Rugeley U.D.C.—Three old people's dwellings at Bow-st. E. J. James, E. & S., Council House. Dep. £2 2s.

***Wigan B.C.**—100 dwellings on Worsley Mesnes estate. B.E. Dep. £2 2s.

FEBRUARY 10.

***Ploughley R.D.C.**—Two houses at Evans-la./Mill-st., Kidlington, and 16 houses at Evans-la./Bicester-rd., Kidlington. F. Openshaw (A.), Oxford Allied Architects, 66, St. Gile's-st., Oxford. Dep. £2 per scheme.

FEBRUARY 13.

***Bootle B.C.**—Two blocks of shops, maisonettes, flats and garages at Captain's-la. site. B.S. Dep. £2 2s.

***Sheffield City C.**—Secondary modern school at Beaver Hill. W. L. Clunie (F.), Deputy City A Dep. £3.

FEBRUARY 14.

Clevedon U.D.C.—Erection of public conveniences at Station-rd. S., Council House. Dep. £2 2s.

Lowes B.C.—16 flats and 2 lock-up shops on Church-la. housing estate, contract 11. B.E. & S.

FEBRUARY 16.

***Durham C.C.**—Library furniture for Stockton-on-Tees Technical Institute. Director of Educ., Durham.

***Middlewich U.D.C.**—16 houses at Chadwick Fields estate. R. J. B. Wilkinson, S., Victoria-bldgs. Dep. £3.

West Suffolk C.C.—Construction of a bridge over the River Brett near Brent Eleigh. County S., Manor House, Bury St. Edmunds.

FEBRUARY 17.

Deal T.C.—118 houses at Balfour-rd. housing estate. B.E. Dep. £2 2s.

FEBRUARY 18.

Chailey R.D.C.—18 dwellings and site works in Telscombe Cliffs-way, Telscombe Cliffs. Council's A. Dep. £3 3s.

***Leeds City C.**—Conversion of "Leafield House," King-la., Moortown, into welfare centre and clinic. City A. Dep. £1.

***Wem R.D.C.**—16 houses. Hind & Brown (L./A.), 2, Market-st., Hanley, Stoke-on-Trent. Dep. £2 2s.

FEBRUARY 21.

***Accrington B.C.**—Four houses at Within Grove estate. B.E. & S. Dep. £2.

***Ealing B.C.**—Laundry building at Central Baths. B.S. Dep. £2.

***Lindsey C.C.**—School at Ashby Priory-la., Scunthorpe. County A., Lincoln.

FEBRUARY 23.

***Hunts C.C.**—New secondary modern school, St. Ives. S. J. Hands, County Architect, Huntingdon. Dep. £2 2s.

***Wrexham B.C.**—Community centre at Kingsley, Queen's Park. B.E. & S., 31, Chester-st. Dep. £2 2s.

FEBRUARY 24.

***Ilford B.C.**—Conversion into "little theatre" of reading-room, Thompson Rooms, High-rd. B.E. & S. Dep. £5 5s.

FEBRUARY 25.

Alcester R.D.C.—Scheme A, 4 houses at Great Alne and 2 at Haselor; scheme B, 2 houses at Wixford and 2 at Marlcliff. F. Andrews & Son, architects, 95, Colmore-row, Birmingham. Dep. £2 2s. per scheme.

***Brighton B.C.**—Secondary school at Varndean. B.E. & S., 26-30, King's-rd. Dep. £3 3s.

NO DATE.

***Castle Donnington R.D.C.**—12 houses. McCarthy Collings & Co., chartered architects, 187, Forest-rd., Coalville. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

FEBRUARY 2.

Keighley B.C.—B.E. & S. (Materials.)
Shrewsbury B.C.—B.S. (Materials.)

FEBRUARY 4.

Clayton-le-Moors U.D.C.—S. (Materials.)
Poole B.C.—B.S. & W.E. (Materials.)

†**Heywood B.C.**—B.E. & S. (Materials.) Tenders by February 7.

FEBRUARY 6.

Portsmouth T.C.—Contracts and Supplies Section, Clarence-par., Southsea, Portsmouth. (Materials.)
*Sutton and Cheam B.C.—Fencing and gates at 49 houses, Ridge-rd., Sutton. Chief Hsg. Officer, 24, Cheam-rd. Dep. £1 1s.

FEBRUARY 7.

Mitcham B.C.—B.E. & S. (Materials.)
Rainford U.D.C.—S. (Materials.)
Walton and Weybridge U.D.C.—E. & S. (Materials.)

FEBRUARY 9.

Frinton and Walton U.D.C.—E. & S. (Materials.)
Mansfield B.C.—B.E. (Materials.)

FEBRUARY 10.

Bolton C.B.—B.E. & S. (Materials.)

FEBRUARY 12.

Leeds T.C.—Highways E. (Materials.)

FEBRUARY 13.

Barking B.C.—B.E. & S. (Materials.)
Huddersfield C.B.—B.E. & S. (Materials.)

FEBRUARY 14.

Harrogate B.C.—B.E. & S. (Materials.)

FEBRUARY 16.

Barnsley C.B.—B.E. & S. (Materials.)
Bucks. C.C.—County S. (Materials.)

FEBRUARY 17.

Poole B.C.—B.E. & S. (Materials.)

FEBRUARY 18.

Greenwich B.C.—B.E. & S. (Materials.)

FEBRUARY 21.

Macclesfield B.C.—B.E. (Materials.)

FEBRUARY 23.

Jarrow B.C.—B.E. & S. (Materials.)
Northumberland C.C.—County S. (Materials.)
Turton U.D.C.—E. & S. (Materials.)

ROADS, SEWERAGE AND WATER WORKS

FEBRUARY 2.

Durham C.C.—Surface dressing of roads. County E. & S., 43, Old Elvet, Durham.

FEBRUARY 4.

Brentwood U.D.C.—Making-up of parts of Kensington-rd. and Balmoral-rd. E. & S., Council Offices. Dep. £1 1s.

FEBRUARY 9.

King's Lynn B.C.—Construction of roads and sewers on the Newlyn housing site. B.E., Clifton House, Queen-st. Dep. £2 2s.

FEBRUARY 11.

St. Helens B.C.—3,000 yds. of spun-iron pipes. B. & W.E. Dep. £2 2s.

FEBRUARY 17.

Devizes B.C.—Part reconstruction of main outfall sewer and alterations to main sewage disposal works. B.S., The Chequers, Devizes. Dep. £5 5s.

FEBRUARY 19.

Norton R.D.C.—Works of sewerage and sewage disposal, Rillington. D. H. Moore, B.Sc., M.Inst.C.E., consultant engineer, Valley Bridge-par., Scarborough. Dep. £5 5s.

FEBRUARY 21.

Haltwhistle R.D.C.—Two service reservoirs, pumping station, mains, etc. E. & S. Dep. £5 5s.
Oxfordshire C.C.—Surface dressing of roads. County S., 8, New-rd., Oxford.

FEBRUARY 27.

Crickhowell R.D.C.—Glangrwyney and Llangenny water supply scheme. Thomas and Morgan & Partners, civil engineers, 23, Gelliwastad-rd., Pontypridd. Dep. £3 3s.

MARCH 9.

Thurrock U.D.C.—Marsh Farm sewage disposal works extensions. W. H. Radford & Son, consultant engineer, Albion-chbrs., King-st., Nottingham. Dep. £5 5s.

GENERAL BUILDING WORK

(LONDON)

Greenwich.—FLATS AND MAISONETTES.—Housing Com. recommends B.C. to acquire, by compulsory purchase or otherwise, sites 380-394 (even), Woolwich-rd., with the intention of erecting six flats and two maisonettes.

Hampstead.—FLATS.—Detailed plans have been prepared and submitted to Housing Com. by D. H. McMorran (F.), 14, North Audley-st., W.1, for the erection of 80 flats at Fellows-rd. housing site. They have been approved in principle and forwarded to the L.C.C.

Hampstead.—DEVELOPMENT.—L.C.C. town planning approval, subject to certain conditions, has been given to proposals by J. B. F. Cowper (F.), 39, Gordon-sq., W.C.1, for the Kilburn Gate housing scheme (part two).

Holborn.—RECONSTRUCTION.—Plans are being prepared by T. P. Bennett & Son, 43, Bloomsbury-sq., W.C.1, for the rebuilding of the bomb-flattened site at Holborn Viaduct, immediately west of the new Atlantic House, by the erection of a block of offices. Part of the site has had to be sacrificed for traffic reasons. Construction, it has been estimated, will take about 18 months, and licences are yet to be issued. Cost is estimated to be approximately £1 million.

"THE BUILDER" PRICES

BRASS AND COPPER TUBES

The Brass and Copper Tube Association have announced the following increases in their basis prices consequent upon the increase in the market price of zinc:—

	Basis Price. per lb.
Brass tubes increased by ¼d. per lb.	26¼d.
Brazed brass tube increased by ¼d. per lb. ...	37¼d.
Drawn brass strip sections increased by ¼d. per lb.	36¼d.

The list prices of brass and aluminium brass ferrules are increased by ¼d. per lb.

The basis price for brass tubes applies to both round and shaped solid drawn tubes.

(PROVINCIAL)

Berwick.—J. Van Smirren, Ltd., c/o Trading Estate, have been granted licence to build a shellfish canning factory.

Durham.—R.D.C. plans erection of 50 "Unity" houses.—R.D.C. approved estimates for 40 houses at West Rainton, est. cost £48,014; 52 at Belmont, est. cost £60,334; 58 at Sherburn, est. cost £64,860; and 48 at Bowburn, est. cost £51,750. Surveyor is K. G. Miller, Byland Lodge, Durham, and Hsg. A. is J. F. Willis.—Tenders are being obtained for the erection of 16 houses in Oswald Court for City C. Plans by City E.'s Dept.—C.C. is to convert No. 11, The Cliff, Seaton Carew, into old people's hostel, and tenders are being obtained. County A. is G. R. Clayton, Court-la.—City C. is seeking loan sanction for £15,510 for erection of 16 bungalows on Sunderland-rd. estate.

Felling-on-Tyne.—U.D.C. intends beginning work this year on erection of 446 houses. Housing A. is R. Morton.

Glendale.—R.D.C. is to negotiate purchase of land at Wooler for erection of 70 houses. Surveyor is A. R. Field, Council Offices, Wooler, Northumberland.

Kidsgrove.—U.D.C. to negotiate tender for 10 bungalows for aged at Fifth-ave., and approved 14 bungalows at Hollins-cres.

Kirkham.—U.D.C. approved layout for 41 houses, two police houses and lock-up garages at Freckleton-st. estate.

Morpeth (Northumberland).—National Coal Board is to erect 60 houses at Longhirst Colliery. Board's Architects' Dept. is at Ashfield Tower, Gosforth.

Northallerton.—North Riding C.C. is to convert premises in Zetland-st. into infant welfare centre, and tenders are being obtained. Plans by County A., County Hall, Northallerton.

North Riding.—Tenders are being obtained by C.C. for erection of 10 firemen's houses and an infant welfare centre at Richmond. Plans by County A., H. J. Knowles, County Hall, Northallerton.

Oldham.—B.C. to commence erection of 900 houses at Holts estate in the spring.

Plymouth.—Preliminary plans for an eight-storey block of 48 flats to be erected in Boon's-pl. have been submitted to Hsg. Com. by City A., H. J. Stirling, for approval.—Loan consents have been given to City C. of £240,097 for erection of 120 flats in Ross-st. and £48,797 for 30 flats at Stoke House.—M. of H. and L.G. have approved sketch plans for 28 flats at Seven Trees.

Stafford.—Universal Grinding Wheel Co., Ltd., to erect another building, £200,000 est. cost.

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TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Aldridge.—34 houses at Leighswood estate, for U.D.C. E. & S., Council Offices, Daw End, Rushall: *Sabin & Young, Ltd., Pelsall-la., Rushall, nr. Walsall, Staffs.

Aysgarth.—Seven houses at Gayle-la., Hawes, for R.D.C. H. N. Hartley, A.R.I.B.A., James Hartley & Son, Swadford-chbrs., Skipton: *W. J. Dinsdale, Scaur View, Gayle, Hawes, £9,459.

Bingley.—41 houses at Cottingley site, for U.D.C.: *F. W. Heaton (Builders), Ltd., King's-rd., Cross-flats. 11 houses at Wilsden site; *H. Clark & Son, Ltd., Whitley-st.

Birkenhead.—Office accommodation and war-damage repairs at 3, Conway-st., for B.C.: *Lloyd & Cross, Ltd., Birkenhead, £21,374.

Chester.—11 shops, 9 maisonettes, 4 flats and 11 garages comprising shopping centre at Blacon housing estate, for City C. City E. & S., Municipal Offices, 43, Northgate-st.: *Thomas Warrington & Sons, Ltd., 82, Station-rd., Ellesmere Port, £62,304.

Coventry.—848 "No Fines" houses at Tile Hill, for T.C.: *Geo. Wimpey & Co., Ltd., London, £1,005,338.

Dartmouth.—Repair and restoration of the seventeenth-century Butterwalk building. David E. Nye & Partners, Victoria-st., London, architects: *P. W. Wilkins & Son, Ltd., Torquay.

Durham.—Erection of a new High Usworth cty. sch., for C.C.: *Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees, £45,000.

Ennerdale.—70 houses at Distington and 61 houses at Cleator Moor, for R.D.C.: *Thomas Armstrong, Ltd., Cockermouth.

Fleetwood.—33 houses at West View estate, for T.C.: *G. Walsh, Blackpool, £46,125.

Halesowen.—21 dwellings at Mapletree-la., for T.C.: *K. S. Rock & Co., Ltd., Little Poultney-st., Wolverhampton, £28,469.

Halifax.—Houses at Mixenden, for T.C.: *Crossley & Radcliffe, Ltd. (102); *L. & W. Morrell, Ltd., Low Moor (168).

Hampstead.—Erection of seven flats and one maisonette at the Broomsleigh-st. housing scheme, for B.C.: *W. B. Towers & Co., Ltd., £14,937 (after reductions).

Ilkeston.—Eight shops and maisonettes at Kirk Hallam estate, for B.C.: *Rice & Beck, Ltd., £30,671.

Islington.—Erection of 48 flats on two sites in Grange-gr., for B.C.:—

Richard Costain, Ltd., S.W.1	£111,460
G. E. Wallis & Sons, Ltd., W.C.2	105,767
W. J. Simms, Sons & Cooke, Ltd.	104,403
Taylor Woodrow Construction, Ltd., W.1 ...	103,312
Allen Fairhead & Sons, Ltd., Enfield ...	102,336
Rowley Bros., Ltd., N.17	101,000
Pitchers, Ltd., N.7...	100,752
W. H. Gaze & Sons, Ltd., Kingston-on-Thames	99,563
‡Gee, Walker & Slater, Ltd., 100, Park-la., W.1	97,084

Keighley.—Erection of new technical college extension at Cavendish-st., for C.C.: *H. V. Robinson, Ltd., Keighley.

Kenilworth.—80 houses at Bulkington estate, for U.D.C.: *Thomas Bates & Son, Ltd., 51, Warwick-st., Coventry.

Kirkburton.—18 houses at Shepley, for U.D.C.: *Brockholes Stone & Sand Co., Ltd., Brockholes, Huddersfield, £24,033.

Lanark.—Erection of 26 houses at the Kildare site, for the Corporation. Whyte & Barnie (F.), architects, 45, High-st., Lanark. Excavation, brick, building and allied works, *Daniel Ross, Newhouse, Lanark, £18,225. Plumbing, sanitary engineering and allied works, *Allan Wallace, Wellgate, Lanark, £5,111. Joinery, carpentry, glazing and allied works, *Arthur Macewan, Lanark, £11,068.

Litherland.—20 houses at Field-la. site, Hatton Hill-rd., for U.D.C.: *Direct Labour.

¶**London (Admiralty).**—Particulars of contracts placed by Civil Engineer-in-Chief's Department, Admiralty:—

Yeovilton: One officer's house, Carter & White (Builders), Ltd., 4, High-st., Shepton Mallet, Somerset. *Isle of Grain*: Reinforced concrete jetty, John Mowlem & Co., Ltd., 91, Ebury Bridge-rd., London, S.W.1. *Portsdown A.S.R.E.*: Main block, etc., Jno. Croad, Ltd., Portland-st., Portsmouth.

¶**London (Air Ministry).**—New contracts to value of £500 or over for week ended January 17:—

Building work: Thos. Lowe & Sons, Ltd., London, W.6; Y. J. Lovell & Son, Ltd., Gerrards Cross, Bucks; Dudley Coles, Ltd., Plymouth; G. & J. Seddon, Ltd., Stoke-on-Trent; E. Clarke & Sons, Ltd., Melton Mowbray, Leics. *Construction of fuel installation*: Scottish Aviation, Ltd., Prestwick Airport, Ayrshire; Farrens, Ltd., Edinburgh, 2. *Heating services*: Fred G. Alden, Ltd., London, W.C.2; Norris Warming Co., Ltd., London, W.C.1. *Resurfacing work*: Limmer & Trinidad Lake Asphalt Co., Ltd., Glasgow, C.2; The General Asphalte Co., Ltd., London, S.W.1. *General maintenance work*: J. H. Woodward (Cttrs.), Ltd., Leamington Spa.

¶**London (Air Ministry).**—New works contracts to value of £500 or over for week ended January 10:—

Civil engineering: Ankerdine (Public Works), Ltd., Worcester. *Building work*: W. & J. R. Watson, Ltd., Edinburgh 3; Cubitt & Gotts, Ltd.,

Ipswich; Stanley Hugh Leach, Ltd., Hayes, Middx; Y. J. Lovell & Son, Ltd., Gerrards Cross, Bucks. *Electrical installation*: Electrical Installations, Ltd., London, S.W.1. *Hutting*: Downing Rudman & Bent, Ltd., Chippenham, Wilts. *Floor tiling*: Marley Tile Co., Ltd., Leighton Buzzard, Beds. *General maintenance work*: G. H. Miller & Co., Ltd., London, E.7. *Overhaul and repair of generating sets*: E. Eadington & Sons, Cheshire.

London (British Railways).—Contracts placed by the Eastern Region:—

Renewal of roof of locomotive shed and other repairs at Millhouse motive power depot, Sheffield: *George Simpson (London), Ltd. Renewal of roof covering, Pasture-st. goods shed, Grimsby: *R. F. Herron, Ltd. Cleaning and painting of King's Cross local, suburban and York-rd. stations: *Shirley Painting and Decorating Service. Cleaning and painting King's Cross station, Eastern and Western office blocks, platforms 1-10, station building, circulating area and colonnade, cab rank and car road: *A. Cameron, Ltd. Renewal of floor, Grimesthorpe wagon repair shop, Sheffield: *Fletcher & Co. (Contractors), Ltd. Construction of new lavatory accommodation, Doncaster carriage works: *J. Willmott & Sons (Hitchin), Ltd. Repairs to floating pontoon and bearings of hinged bridges, New Holland: *The Humber Graving Dock & Engineering Co., Ltd. Construction of station master's house (contract No. 2), Potters Bar station: *S. Worboys, Ltd. Cleaning and painting roofs, King's Cross station: *R. Ridd & Son (Contractors), Ltd. Supply and installation of signal and telegraph cables between Fenchurch-st. and Bow junction: *British Insulated Callender's Construction Co., Ltd. Reconstruction of parcels office and ladies' waiting room, Fenchurch-st. station: *Kirk & Kirk, Ltd.

L.C.C.—The undermentioned contracts exceeding £2,500 in value have been placed by the L.C.C. during the period November 4 to December 30 last:—

Erection of prefabricated woodwork hut at Forest Hill sec. boys' sch., Lewisham, S. A. Thorne, £2,919. Erection of gymnasium block at Michael, Leigham Court-rd., Streatham, for Philippa Fawcett training college, Bridge, Walker, Ltd., £31,561. Construction of tennis courts, etc., at Deansfield playing field, Eltham, Grassphalte, Ltd., £2,521. Electrical installation at Bonner cty. prim. sch., Bethnal Green, Alexander Hawkins & Sons, Ltd., £2,499. Laying out gardens to blocks 8-14 and 38-49, Woodberry Down estate, Stoke Newington, George G. Whitelegg, £2,662. War-damage repairs at Southwark Park cty. prim. sch., Bermondsey, William Blood, Ltd., £11,950. War-damage repairs at Middle Park cty. prim. sch., Woolwich, Foven Construction Co., Ltd., £8,304. Erection of County complement to Prendergast sch., Lewisham, Thomas & Edge, Ltd., £243,018.

Supply and erection of cleft chestnut pale fencing at Becontree estate (area 3), Chestnut Products, Pembury, £8,972. Supply and erection of cleft chestnut pale fencing at Becontree estate (area 1), Edward Tyrrell, Ltd., Sevenoaks, £9,017. War-damage repairs at Hornfair Lido, J. & J. Dean, Ltd., £20,403. Renewal of Assembly Hall flooring at Avery Hill training college (Burma Gurgun), Vigers Bros., Ltd., £1,363. Improvements to housecraft centres at Smallwood prim. sch., Woodcock Bros. (Wimbledon), Ltd., £1,744. Formation of housecraft rooms at Mouson prim. sch., Robertson & Cameron (Building Contractors), Ltd., £3,306. Construction of dining-hall and kitchen block at Robert Browning sch., J. A. Dumayne & Co., Ltd., £11,855.

London (Metropolitan Police).—Contracts placed by Metropolitan Police:—

Erection of three houses at Westbere-rd., Hampstead: *C. W. B. Simmonds, Ltd., £7,650.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended January 10:—

Herefordshire: M/Supply Depot, Haywood, Hereford, repairs to roads, Bodenham Tarmacadam, Ltd., Bodenham, Hereford. *Isle of Man*: Coastguard Station, Park-rd., Ramsey, I.O.M., erection of five dwellings, offices and duty room, T. Hosker, Ltd., 29, West Quay, Ramsey, I.O.M. *Lanarkshire*: M/Ag. and Fisheries, Netherton Farm, Westerton, Glasgow, erection of new byre, Jas. Laidlow & Sons, Ltd., Clydesdale Works, Dalmarnock Bridge, Rutherglen. *Lancashire*: Post Office, South Shore Branch, Waterloo-rd., Blackpool, repairs to roof and parapet wall, Wm. Eaves & Co., Ltd., Daggers Hall Works, Vicarage-la., Blackpool. *Northumberland*: Home Office, Cambois, nr. Blyth, erection of a standard Home Office civil defence store (Marston shed), John Jackson & Sons, 72, Corporation-st., Newcastle-on-Tyne, 4. *Warwickshire*: Kitts Green-rd., Kitts Green, Birmingham, erection of proposed P.O. district and sorting office, Bragg Bros., Ltd., Church Hill-rd., Solihull, Birmingham. P.O. Building, Oldbury, Birmingham, extension to sorting office, A. F. R. Godfrey & Co., Ltd., 46, Waterloo-rd., Wolverhampton, Staffs. *Yorkshire*: Head Post Office, Market-st. (Chapel adjoining), Wakefield, adaptations to form sorting office, Walter G. Birch (Harrogate), Ltd., Montpellier House, Harrogate.

¶London (War Dept.).—Contracts placed by W.D. during week ended January 10:—

Denbighshire: Building work, R. J. Russell, Ltd., Wolverhampton. *Herefordshire*: Laying railway track, En Tout Cas Co., Ltd., Syston, Leicester. *Lancashire*: Construction and preservation of bridge equipment, Robert Thompson & Morris, Lancaster. *Worcestershire*: Re-sheeting Romney shedding, Geo. Linnecor & Son, Ltd., Birmingham 6. *Shropshire*: Laying railway track, En Tout Cas Co., Ltd., Syston, Leicester. *Co. Down*: Building work, A. C. Simpson, Armagh. *Co. Antrim*: Re-sheeting store sheds, P. J. Walls & Bros., Ltd., Belfast. *Hampshire*: Miscellaneous, W. R. Smith, Hayling Island. *Buckinghamshire*: Roadwork, Sparkes Bros., Ltd., Feltham. *Wiltshire*: Building work, F. H. Biddiscombe, Trowbridge. *Hampshire*: Roadwork, All-weather Mechanical Grouting Co., Ltd., London, S.W.1. *Kent*: Floor and wall tiling, Dudley Coles, Ltd., Plymouth. *Berkshire*: Miscellaneous, Y. J. Lovell & Son, Ltd., Gerrards Cross. *Wiltshire*: Painting and decorating, Spraycraft Co., Ltd., Bromley. *Hampshire*: Painting, Alfred Bagnall & Sons, Ltd., London; Building work, Sheppard & Short, Ltd., Wembley. *Essex*: Provision of pipe lines, etc., F. B. Thackray & Co., Ltd., Huntingdon.

Maryport.—New sec. sch., for Cumberland C.C.: *John Laing & Sons, Ltd., Carlisle.

Newcastle.—Erection of new Rutherford gram. sch. in Newcastle. Plans by the City A., G. Kenyon, 18, Cloth-market, Newcastle: *H. Kindred, 371, Westgate-rd., Newcastle-on-Tyne, £214,843.

Newcastle.—Alterations and additions to business premises in 1 and 3, Weidner-rd., Newcastle, for the Co-operative Society: *Newcastle-on-Tyne Co-op. Works Dept., Claremont-rd.

Newcastle.—Erection of new Rutherford grammar school for boys, for Education Com.: *Harry Kindred (Newcastle), Ltd., £214,843.

Preston.—Alterations and extensions to Larches House, Larches-la., for T.C.: *I. Spencer & Son, Ltd., Liverpool-rd., Penwortham, £17,275.

Rowley Regis.—Houses at Brickhouse Farm estate, for T.C.: *Samuel Parkes (Builders), Ltd., £52,108 and £22,619 (36 and 16); 10 houses at Greenfield-ave., Cradley Heath: *Batham & Baddall, Ltd., £14,728.

St. Austell.—24 houses in two contracts at Creakavose housing site, St. Stephen, for R.D.C. A. W. Townsend, A.M.I.C.E, A.M.I.Mun.E., E. & S., "Trevarna," 12, Carlyon-rd.: *Camin (Bristol), Ltd., Northgate-st., Launceston, £14,110 and £14,922.

Salford.—New bowls pavilion at Ordsall Park, for T.C.: *J. Blackshaw & Sons, Ltd., £4,556.

Scottish Special Housing Association, Ltd.—Contracts placed between October 23 and December 22 last:—

Site Servicing.

Pulpit Rock, Oban (20 Tradl.), John MacLachlan & Son, Lochside-st., Oban, Heel of pavement kerb. Hyvots Bank, Edinburgh (70 Dunedin), S.E. Scotland Elec. Board, Edinburgh, Mains services. Milton of Campsie (26 Orlit), Val de Travers Asphalte Paving Co., Glasgow, Surfacing concrete road.

House Erection.

Drongan, Ayrshire (108 Dunedin); Mayfield, Saltcoats (100 Dunedin); Craigens, Cumnock (150 Dunedin); Stanley-rd., Ardrossan (56 Dunedin); Kelloholm, Kirkconnel (140 Dunedin): Jas. Laidlaw & Sons, Ltd., Dalmarnock Bridge, Rutherglen. All trades.

East Carmuirs, Falkirk (260 Dunedin), Scottish Gas Board, Falkirk, Gas services. Hilton-rd., Alloa (6 Tradl.), Scottish Gas Board, Alloa, Gas services. Fairyburn, Alloa (100 Cruden), Scottish Gas Board, Alloa, Gas services. Towers-rd., Girvan (4 Tradl.), S.W.S. Elect. Board, Greenholm-st., Kilmarnock, Electricity services. Rutherglen (50 Tradl.), S.W.S. Elect. Board, 137, Almada-st., Hamilton, Electricity services. Sighthill, Edinburgh, Electricity services. Niddrie Marischal, Edinburgh (80 Dunedin), Barnet & Morton, Ltd., Kirkcaldy, Fencing.

Netherthird, Cumnock (64 No Fines), Weir Housing Corporation, Ltd., Coatbridge, All trades. Falside, Bathgate (60 Dunedin), S.E.S.E. Board, Stirling, Electricity services. Laighstonehall, Hamilton (58 Atholl), Barnet & Morton, Ltd., Kirkcaldy, Fencing. Fergushill-rd., Kilwinning (Round Burnpark Cottage), Hay & Anderson, Kilwinning, Stockproof boundary fencing. Mains of Fintry, Dundee (246 No Fines), A. D. Mitchell & Sons, Kirriemuir, Plumber; J. Kilpatrick & Son, Ltd., Edinburgh, Electricity. Bellsmyre, Dumbarton (234 Flats), S.W.S.E. Board, Glasgow, Electricity services. Fergushill-rd., Kilwinning (24 Weir), S.W.S.E. Board, Kilmarnock, Electricity services. Caponflat, Haddington (46 Tradl.), Scottish Gas Board, Edinburgh, Gas services.

Mains of Fintry, Dundee (2 No Fines), Scottish Gas Board, Dundee, Gas services. Mains of Fintry, Dundee (50 No Fines), Boyne, Smith & Wyllie, Edinburgh, Electrical; A. D. Mitchell & Sons, Kirriemuir, Plumber. Cadder-rd., Glasgow (62 No Fines: 2 brick)), Geo. Wimpey & Co., Ltd., Edinburgh, Alt trades. Mastrick, Aberdeen (100 Dunedin and 100 Hall), N. of S. Hydro Electric Board, Edinburgh, Electricity services. Auchenback, Barrhead (52 Miller), S.W.S.E. Board, Glasgow, Electricity services. Fergushill-rd., Kilwinning (24 Weir), Scottish Gas Board, Kilwinning, Gas services. Sighthill, Edinburgh (4 Experimental), The Ruberoid Co., Ltd., 135, Wellington-st., Glasgow, Supplying and laying roofing. Mastrick, Aberdeen (100 No Fines), Neuchatel Asphalt Co., Glasgow, Supplying and laying asphalt flooring. Poplar-ave., Bishopton (6 Tradl.), J. Grant & Son (Decorators), Ltd., Argyle-st., Glasgow, Paint.

West End, Fraserburgh (36 Granite), W. & B. Thomson, High-st., Fraserburgh, Roof tiler; Alex. Buchan, 9, Denmark-st., Joiner; A. S. Cheyne, 3, Albert-st., Fraserburgh, Mason; J. F. Gray, 85, Bon Accord-st., Aberdeen, Glazier; Murray Mackie, Ltd., 22-26, Queen-st., Peterhead, Electrical; Alex. Campbell, High-st., Fraserburgh, Plaster; J. McNab, 31a, Commerce-st., Fraserburgh, Plumber.

Spalehall, Newarthill (Tradl.), Barnet & Morton, Ltd., 192, High-st., Kirkcaldy, Fencing. Newtongrange, Midlothian (252 No Fines: 2 Shops), Jas. Kirkpatrick & Son, Ltd., North Castle-st., Edinburgh, Electrical. Sighthill, Edinburgh (8 Experimental), Boyne, Smith & Wylie, 22, Nelson-st., Edinburgh, Electrical. Auchenback, Barrhead (76 Lawrence), Scottish Gas Board, Barrhead, Gas connections. Delphwood, Clackmannan (228 Tradl.), Barnet & Morton, Ltd., Kirkcaldy, Fencing. Sauchie (104 Tradl.), Barnet & Morton, Ltd., Kirkcaldy, Fencing. Fairyburn, Alloa (100 Cruden), S.E. Scot. Elec. Board, Central Sub Area, Stirling, Electrical services.

New Galloway, Kirkcudbright (19 Tradl.), Limmer Trinidad Lake Asphalte Co., 45, Hope-st., Glasgow, C.2, Floor finish. Sighthill, Edinburgh (4 Experimental), Semtex, Ltd., 53, Kelvin-ave., Hillington, Glasgow, Floor finish. Kinlochard (12 Tradl.), Scottish Speedwell Co., Ltd., 245, Crownpoint-rd., Glasgow, Floor finish. Livingston Station (4 Tradl.), Scottish Gas Board, 25, Chester-st., Edinburgh, Gas services; S.E. Scot. Elec. Board, Woodlands, Stirling, Electrical services. Mains of Fintry, Dundee (416 No Fines: 28 O'Sullivan), Scottish Gas Board, Dundee, Gas services. Oakley, Fife (Weir), Barnet & Morton, Ltd., Kirkcaldy, Fencing.

Whitecraigs, Midlothian (28 Tradl.), M. Thomson, Croft-st., Dalkeith, Ecavator and brick; P. Nimmo & Son, Ltd., Glasgow-rd., Edinburgh, Joiner; Cunningham, Dickson & Walker, 31, Frederick-st., Edinburgh, Glazier; Middleton & Son, 22, Dublin-st., Edinburgh, Paint; Boyne, Smith & Wylie, Edinburgh, Electrical; Lawrence Gray, 153, North High-st., Musselburgh, Plumber; N. Thomson, Dalkeith, Plaster. Laighstonehall, Hamilton (130 Orlit), Barnet & Morton, Ltd., Kirkcaldy, Fencing.

Cadder-rd., Glasgow (80 Flats: 30 Cottages), Dougall & Co., Ltd., Glasgow-rd., Dumbarton, Mason, brick, etc., and carpenter and joiner; C. Wilson (Glasgow), Ltd., Glasgow, Tiler and roughcast, and plaster; A. Thomson, Ltd., 132, Main-st., Bellshill, Plumber; J. Grant & Son (Decorators), Ltd., 852, Argyle-st., Glasgow, Paint; Claud Hamilton, Ltd., Otago-st., Glasgow, Electrical; G. & G. Rae & Co., Ltd., 721, Govan-rd., Glasgow, Glazier.

Blackwood (42 Myton); Baillieston (32 Myton); Shotts (30 Myton); Carluke (52 Myton); Neilsland-rd., Hamilton (62 Weir); Dalneigh (44 Dunedin); Hilton (158 Dunedin); Newmains (56 Atholl); Calton, Campbeltown (150 Dunedin); Crosshill & Meadows (52 Dunedin), A. M. Tweedie & Co., Glasgow, Fencing.

Newtongrange (600 No Fines), James Strang & Son, Falkirk, Fencing. Garthdee West (106 Various), C. A. R. Brown, 41, Merkland-rd. East, Aberdeen, Guard rails. Currie (78 Dunedin), Northern Sports Ground Construction Co., 133a, George-st., Edinburgh, Fencing. Brora (12 Tradl.), National Flooring Co., Burnfield-rd., Glasgow, Mastic flooring. Patna (80 No Fines), Weir Housing Corporation, Calder-st., Coatbridge, All trades. Lesmahagow (160 No Fines), Weir Housing Corporation, Calder-st., Coatbridge, All trades. Sighthill, Edinburgh (8 Experimental), Scottish Gas Board, Calton Hill, Edinburgh, Gas services.

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House Erection.

Beith-rd., Johnstone (6 Tradl.), All trades except plumber and electrical.

South Shields.—Supply of steelwork for proposed additions to girls' high sch., for E.C. Architects, T. A. Page, Son & Hill, 75, King-st., South Shields: *R. Fraser & Co., Ltd., Hebburn-on-Tyne.

South Shields.—Construction of a second children's home at Simonside, for T.C. John Reid, Boro' E.: *Ridley (South Shields), Ltd., St. Mary's-ave., South Shields, £4,329.

Stoke-on-Trent.—Houses at Newstead Farm estate, for T.C.: ‡Direct Labour, £79,802 (56); ‡H. J. Emery, Ltd., £55,286 (38); 68 at Heathcote-st., Longton: ‡L. Bates, Ltd., £109,980; 28 at Carron-st., Fenton: ‡C. A. Poole, Ltd., £48,749; 10 at Windermere-st., Cobridge: ‡J. W. Walton, £21,688; 72 at Heathcote-st., Longton: ‡Tideswell Bros., Ltd., £109,629.

Sunderland.—Erection of new Hylton Red House cty. prim. sch., for E.C. H. C. Bishop, Boro' A., Grange House, Stockton-rd., Sunderland. Quantity surveyors, Martin & Felton, Lloyds Bank-chbrs., Fawcett-st., Sunderland: *Tate & Holmes, Ltd., Benwell, Newcastle-on-Tyne, £73,154.

Sunderland.—Erection of an R.C. Church on the Farringdon estate. Architects, J. Walton Taylor & Son, St. James'-bldgs., Gallowgate, Newcastle-on-Tyne: *J. Cummings, Matamba-ter., Sunderland.

Sunderland.—Erection of 35-ft. extensions to two shipbuilding berths and the construction of welding bay, for William Doxford & Sons, Pallion, Sunderland: *Brims & Co., Ltd., City-rd., Newcastle-on-Tyne.

Wakefield.—12 flats at George-st., for T.C.: *Henry Boot & Sons, Ltd., Sheffield.

Walker-on-Tyne.—Construction of reinforced concrete jetty 355 ft. long, 45 ft. wide, fronted with steel sheet piling and timber fendering at the Walker Shipyard of Swan Hunter & Wigham Richardson, Ltd. Consulting engineers, T. F. Burns & Partners, 3, Ellison-pl., Newcastle-on-Tyne: *Demolition & Construction Co., Ltd., St. James'-sq., London, S.W.1.

Wallasey.—Three blocks of three-storey flats at site T6, for B.C.: *J. Boyd & Co. (Wallasey), Ltd.

Walsall.—124 houses at Gipsy-la. estate, for B.C.: *Rock & Downs, Ltd., Aldridge, £168,982; 22 houses at Alumwell-rd. estate: *H. Tomlinson & Son, Walsall, £30,150.

Warrington.—New buildings at Burtonwood Aerodrome: *Sir Alfred McAlpine & Sons, Ltd., £750,000.

West Riding.—Extensions at Maltby gram. sch., for E.C.: *R. S. Hutchinson, Ltd., 430, London-rd., Sheffield.

Whitby.—Erection of 34 houses on the Mount estate, for U.D.C.: *Mollekin Bros., West Parade-rd., Scarborough, £44,995 (revised tender).

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